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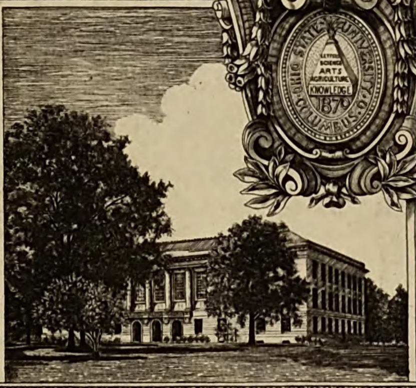

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·3°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 29, 10 a.m. Bar. 29·8. Temp. 60°. Weather, Showery.

Botanical and Horticultural Adventure and Romance.

I.

So accustomed are we to the great variety of trees and shrubs which greet us on every hand in Britain, that we might easily persuade ourselves the majority of them are English; and we the more readily accept this conclusion without giving it much thought, because a visitor to any flower show is convinced that a large number of flowers grown by nurserymen are never seen out-of-doors in this country, and must therefore have been introduced from abroad. Shops and street sellers also assist in the illusion by exhibiting yellow clouds of Mimosa and sheaves of Arums at a time of year when our own gardens and public parks are bare of colour; so that we draw a sharp distinction between these exotic-looking flowers and our own hardy plants, and look forward the more gladly to the English spring when trees foam into leaf and bloom all round us. Sit in one of the parks, in the very heart of the Empire, on a fine, spring day, and admire the very English scene, with its trim lawns, its formal, colourful beds, and its stately trees—the "immemorial" Elms, the chequered, angular Planes—most dear of London trees—and massive Poplars. But the Forsythia, which in Spring was a mound of butter-yellow, came from Japan, and its name commemorates a great Englishman. In the south there is hardly a more typical English tree than the Horse Chestnut, and yet the Horse-Chestnut was introduced from the East. The Lilac and Laburnum, either of which may be seen in almost any London garden, are both naturalised aliens, while the Plane is no more English than the Larch. The beds of Rhododendron, covered with orbs of brilliant blossom, are hybrids raised from plants introduced in recent years, and all our ornamental Conifers are of foreign origin. And so it is with a large number of our most popular garden flowers—Tropaeolums, Tulips, Chrysanthemums, Lilies, Asters, Dahlias, and many more. Sitting in the shadow-barred sunshine, enjoying the fresh, bright colours and soft scents of an English garden, many questions present themselves. All these overseas plants—who brought them to England, and how? Pondering on this, we look at the neat beds and flowering trees with a new interest, trying to picture, by way of contrast, the dank, steaming jungle of the tropics, with the glittering alpine meadows on the lap of the snow mountains brooding over all. Most of the plants mentioned have been brought from a distance by plant hunters, who in their search for new species, or better varieties, have penetrated into some of the most inaccessible corners in the high places of the earth, situated amidst scenery terrifying in its grandeur, inhabited by primitive tribes, or worse still, not inhabited at all. Not without a thrill do we learn that Rhododendrons have been brought from Tibet, which men call "the roof of the world," and where hundreds of square miles are entirely covered with Rhododendron forest: that giant Conifers have been brought from the Rocky Mountains, and Azaleas from Japan, Araucarias from the Chilian Andes, and the bush Forget-me-not (Myosotidium) from a remote and lonely island in the Pacific Ocean. The call of the wild is so insistent that youth feels it is no great sacrifice to leave home for a time and face hardship and danger, if thereby he may add something to adorn the brow of England. The beginning of this century saw the close of an era of pioneer work unprecedented in its effect on the imagination of mankind; and a belief has spread that the age of exploration is over. It is true that no first-rate geographical riddle remains unanswered, but every generation has its own problems to solve, its own discoveries to make, no wit less important, nor even less spectacular, than those of previous generations, and it would be quite true to say that the age of exploration is perennial. The world challenges the pioneer mind like a gigantic question mark, and every problem laid to rest raises up two more in its name. But the greatest secret of this, as of every age, is the secret of Life itself, a subject which makes a special appeal to Englishmen. Not only has this country to deal with human problems in every part of the world, it has also led the van in the fight to rout ignorance and prejudice — those twin stumbling blocks in the path of progress, and solve abstract problems of Life as a whole. The book of exploration, even geographical exploration, we affirm, is not yet written, and any man determined to carve a niche in the roll of fame may rest assured that his chance is here and now. True, there are no more Poles to conquer, no new continents to discover, possibly not even any great rivers, mountains or lakes to reveal. The days of rough and ready pioneering are indeed over, at least for the present—though who can say that in a new age it may not all have to be done over again? But the real exploration is yet to come. The world to-day is for the naturalist to explore; not merely the plant-hunter or the butterfly collector, but the trained observer. Nowadays, we over-specialise, and collecting has become identified too much with the acquisitive spirit, and divorced from the pioneering spirit. The great Victorian naturalists lived abroad for years, collecting, classifying and observing. They sent home vast collections for further study, but they themselves worked out many problems on the spot. They thought boldly, ahead of their age, with that touch of imagination which is akin to genius, and under their leadership the study of natural history grew at a prodigious pace. Who can assess the influence which such men as Darwin, Wallace and Hooker had, not only on their fellow-countrymen, but on the whole western world? Had Darwin not written the *Origin of Species*, we should still owe him a debt for the *Voyage of the Beagle*. Wallace's *Island Life* and *Malay Archipelago* are fascinating works, as is Hooker's *Himalayan Journal*. Such books are rarely written nowadays; the writing of a good natural history travel book is almost a lost art, though we have other models besides those mentioned—Waterton's *Wanderings in South America* and Bates' *Naturalist in Nicaragua* being among the best. In each of these the glamour of the tropics has laid its spell on the author, who not only describes the lavish scenery, but is also inspired to throw a flood of light on many a knotty problem. Thus we are led to share his enthusiasm, to marvel at the sights he saw, revel with him amidst the luxuriant vegetation, and bask in the glorious hot sunshine where life is lived at high speed. But if the modern traveller does not know enough about natural history, assuredly the modern naturalist does not know enough about Life at first hand in the forcing house of the tropics, because he is not a traveller. And it is to the tropics one must go if one would grasp something of the mystery of Life. There is something lacking in the Temperate Zone, not only in degree, but in kind. There, where Life is lived at high pressure, the strangest and most exquisitely adapted forms of life are met with; as though under conditions of maximum provocation and intensive civil war, only the queer and wonderful survive. The study of natural history is in danger. The great wave of enthusiasm raised by the romantic discoveries of the Victorian naturalists has spent itself. Every by-way of which they illuminated the entrance has been explored, and at the end of the passage, when the light has grown dim, men have had recourse to the microscope, still further restricting vision. We are far from decrying the microscope. Many a close secret has been unravelled by its aid alone, and it has stimulated research in every direction. But the modern tendency is to regard the microscope as the end rather than the means, and its place in the combined attack on the unknown requires readjustment. A new inspiration is needed, a new leader, one who will fire the ardour of the rising generation as did the famous hypothesis to which the name "Origin of Species" was given. Can another such leader as Darwin arise in the heavy atmosphere of the Laboratory, or the dusty herbarium, or in our dull, unimaginative museums? More and more our young scientific men settle down to routine work without ever having seen the tropics, thereby sacrificing the greatest adventure in education. What was once the rule is fast becoming the exception. Nor are there to-day the same opportunities as of old.

The Dominion Universities are turning out their own men; a different status has been given to some of the famous colonial gardens, whereby they no longer look to us for a supply of trained botanists. Above all, the blessed word "research" has claimed thousands of victims, who peer through the microscope until a chronic myopia prevents them from seeing anything but the nearest trees. Research is a fine thing in its way, and a necessary thing; but it comes at the end of the chapter, not at the beginning. It would seem then that the call of the wild to-day has sunk to a husky whisper, else the romance and adventure of the field naturalist's life would lure the Englishman as of old. Never let it be thought that the high qualities which animated the old pioneers are not required by the new explorers; patience, courage, foresight, infinite adaptability, and a fierce but controlled and calculating determination are essential to the modern explorer of Life who would make any headway against the growing barrage of ignorance. For it is to Life that every useful investigation ultimately returns, with the everlasting query—What is Life? The chemist may investigate the reactions and properties of matter, but the future lies with the organic chemist who explores the complex materials through which life is expressed. The physicist investigates the structure of atoms, as the basis of matter, and we find that in explaining matter he has explained it away; so that unless he can bridge the gulf between matter and mind his results will ultimately be sterile. It would seem then that we are working on wrong lines; the division of labour has gone too far, and the field naturalist is too completely divorced from the laboratory worker. We require more vision and fewer visionaries.

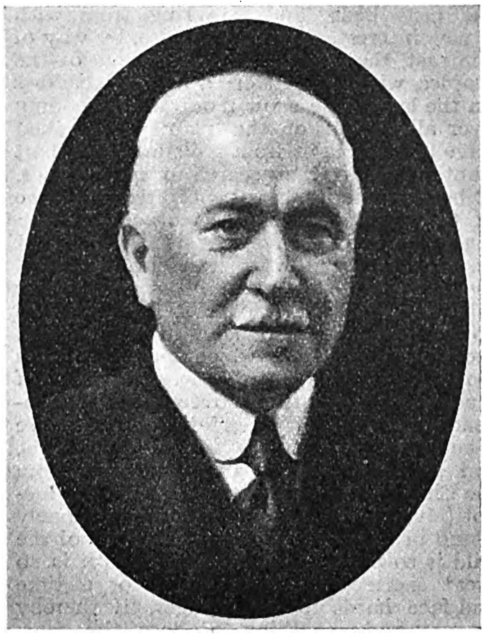
The Fruit Crops.—Will correspondents who have kindly furnished us in the past with reports on the fruit crops notify the Editors of any change of address. The forms will be sent out in the next week or so, and we shall be pleased to send one to any reader specially interested in fruit-growing; application should be made to the Editorial Department.

Honour for a U.S.A. Chrysanthemum Raiser.—The Michigan State College has conferred the Degree of Master of Horticulture on Mr. Elmer D. Smith in recognition of his work in Plant Breeding. The honour is the first of its kind. Mr. Smith flowered his first Chrysanthemum seedlings in 1889, and the first notable variety he raised, named Flora McDonald, was sent into commerce in 1890. Since then, he has raised 432 varieties of Chrysanthemums as well as Cannas and Pelargoniums. Mr. Smith was formerly secretary of the Chrysanthemum Society of America, and was for two years its President.

Compton Acres.—The beautiful gardens at Compton Acres, Canford Cliffs, Bournemouth, the property of T. W. Simpson, Esq., were opened to the public on June 22, when a charge was made on behalf of the Queen Alexandra National Memorial. No fewer than twelve hundred people took advantage of this opportunity of inspecting the rock, Italian garden, Japanese garden and other features of Compton Acres; the day was fine and we learn that the visitors were delighted with all they saw, and none abused the privilege of admission.

International Horticultural Congress, Vienna.—A certain number of the festivities in connection with the Centenary of the Austrian Horticultural Society this year have already been held, notably the very successful horticultural exhibition described in our issue of May 28, p. 367. Other festivities remain, however, including a Dahlia exhibition, to be held during the summer, a Fruit Show to take place in October, and perhaps most important of all, the International Horticultural Congress, which will commence on September 19 and last for a week. Besides discussions on subjects of interest to gardeners of all ranks and tastes, there will be excursions, visits to nurseries, botanic gardens, museums, etc., in such numbers as more than to fill the whole time, the intention being that those attending the Congress should have ample choice of occupations according to their own particular tastes and interests. The complete programme may be obtained from the Congress Secretary at Vienna (Wien 1, Parkring 12).

Mr. W. J. Bean.—On the afternoon of Tuesday, June 21, members of the Kew Staff, and about thirty members of the Garden Club, assembled in the Garden Library to do honour to the much esteemed Curator, Mr. William Jackson Bean. The occasion was the formal presentation by Major Reginald Loder of Mr. Bean's portrait to Kew, a photographic reproduction of which is given below. The Director of Kew, Dr. Hill, in opening the proceedings, said a few words from him seemed desirable as a reason for the gathering that afternoon. Some of them would remember that among the portraits painted by Mr. Ernest Moore, and exhibited at his Exhibition of pictures of famous Yorkshiremen last year, there was one, very properly, of Mr. Bean. He felt at the time that the ultimate home of the portrait should be Kew. In considering ways and means of acquiring the picture, it occurred to him that the members of the Garden Club, to whom Mr. Bean was very well known, might be willing to purchase the portrait for Kew. He approached Mr. Gerald Loder, who promised to consult the members. The first person to whom Mr. Loder mentioned the matter was his brother, Major Reginald Loder, who, with his usual whole-hearted generosity, at once volunteered to purchase the picture himself if Kew, through the Ministry of Agriculture and Fisheries, would accept the portrait. Their meeting that day was the outcome, and he would now ask Lord Lambourne to remove the curtain and expose the portrait to view. Before this actually took place, Major Reginald Loder asked to be permitted to say a few words in explanation of his action in the purchase of the picture. It was mainly for three reasons: first of all, in view of the ready aid that Kew was always willing to give him in helping to solve his many gardening problems; secondly, Mr. Bean, despite his modesty and retiring disposition, was ever ready, with his unique knowledge, to help him, an absolute tyro, with advice on the growing of plants and their names; thirdly, Mr. Bean was the author of that wonderful book, *Trees and Shrubs Hardy in the British Isles*, which they all knew so well, and from which most of his own knowledge and enthusiasm for plants had been obtained. He would like to say how much these two volumes needed a third to bring the subject up-to-date, and he hoped it would soon be ready for the printers and in their hands. Lord Lambourne, in explaining his presence in that position said it was as President of the Royal Horticultural Society he was there that afternoon. The relations between that Society and the Director and Staff of Kew were of the best, and members of the Kew Staff were always ready to help the Society in every way. He was very glad to be there that afternoon, particularly to do honour to their Curator. Mr. Bean was a Yorkshireman. He had hoped, in fact, he expected, that a man so respected and liked would have had some connection with his own county of Essex, but Mr. Bean assured him he had none. Lord Lambourne then unveiled the portrait, and formally presented it to the Director, who accepted it on behalf of the Royal Botanic Gardens, Kew. In response to numerous calls for a speech, Mr. Bean said they might be interested to hear the origin of the portrait. He met Mr. and Mrs. Moore in the Gardens one afternoon, and he and Mrs. Moore sat on a seat talking for some time after Mr. Moore had left. A few days later he received a letter from Mr. Moore, prompted, no doubt, by his wife, asking if he would sit for his portrait. Evidently Mrs. Moore was more impressed by his personality than the artist. He would like to thank Major Loder for the gift of the portrait to Kew, and the large gathering he saw in the room for their presence that afternoon. Sir David Prain then proposed a vote of thanks to Lord Lambourne, busy man though he was, for coming among them to unveil the portrait. He thought also they would like him to thank the artist, Mr. Ernest Moore—who was present with Mrs. Moore—for giving them such a faithful likeness of Mr. Bean and so pleasant a picture.



MR. WILLIAM JACKSON BEAN, I.S.O., V.M.H.
Reproduced from a photograph of the painting by Mr. Ernest Moore.

Linnean Celebration in Bonn.—On May 23, the 220th birthday of the great Swedish botanist, Karl von Linné, the new glasshouses of the Bonn (Germany) Botanical Institute—which have been under construction for three-and-a-half years—were opened in the presence of a distinguished gathering of people. The houses cover an area of 2,200 square metres, which is double as much as the former ones. They are constructed of concrete foundations, with iron and pitch-pine roofs and sides, and the heating is of the newest and best kind.

Reunion of University College London Botanists.—On Thursday, June 23, at Pagani's Restaurant, in connection with the Centenary Celebrations of the College, a dinner was given by the Staff of the Botanical Department, supported by the research workers in the Laboratories, to former members of the staff and to botanical delegates who were attending the celebrations. Professor F. W. Oliver presided, and among the old members present were Dr. D. H. Scott, Professor F. E. Weiss, Dr. C. A. Barber, Professor John Percival, Mr. W. C. Worsdell, Professor A. G. Tansley, Dr. F. F. Blackman, Professor V. H. Blackman, Mrs. A. G. Tansley, Dr. Agnes Arber, Dr. Marie Stopes, Dr. Ethel N. Thomas, Professor F. E. Fritch and Mr. V. S. Summerhayes. Professor F. O. Bower was prevented from attending, having to be present in Glasgow on the same date to receive the presentation portrait painted by Orpen, on his retirement from the Glasgow chair after forty years. Among the botanical delegates who attended were Professor C. H. Ostenfeld, of Copenhagen, Professor G. Senn, of Basel, Dr. L. G. M. Baas-Becking, of Stanford University (California), Dr. R. Ramsay Wright, of Toronto, Professor P. F. Fyson, of the University of Madras, and Dr. A. W. Hill, Director of the Royal Botanic Gardens, Kew.

Phytopathological Excursion.—The annual Phytopathological Excursion, arranged by the British Mycological Society, will take place on Saturday, July 9, when the Research Station at East Malling, Kent, will be visited. The train leaves Victoria at 9.55 a.m., arriving at East Malling Halt at 11.22 a.m. The programme includes a General Account of the Station and its Activities, by the Director, Mr. R. G. Hatton, M.A.;

Reversion in Black Currants, demonstrated by Mr. Hatton and Mr. Amos; Lunch, 12.30; Brief Outline of the Pathological Problems under investigation at East Malling, by Dr. H. Wormald; Tour of Egham Field and Great East Field, and examination of specimens, cultures, etc., in the Laboratory. Features of pathological interest include examples of "Die-back" in Plum trees, various Raspberry diseases, Walnut bacteriosis, spraying experiments against Raspberry Anthracnose, and Apple spraying experiments, etc.; Tea will be provided at 4 p.m., followed by a general discussion. By the kind invitation of the Director, Mr. R. G. Hatton, and the Committee of Management, members will be the guests of the Research Station at lunch and tea. If a sufficient number travel by the 9.55 from Victoria, it may be possible to arrange for a party ticket. Will those intending to be present notify Miss E. M. Wakefield (Secretary), Herbarium, Royal Botanic Gardens, Kew, not later than Saturday, July 2, and state whether they will be joining the train at Victoria. The return train leaves East Malling 5.28 p.m., arriving at Victoria 6.57 p.m.

Importation of Potatos (Malta) Order of 1927.—In view of the discovery of the Potato Moth in consignments of Potatos imported this season from Malta, the Minister of Agriculture and Fisheries has made an Order under the Destructive Insects and Pests Acts, 1877 and 1907, prohibiting the landing in England and Wales of any Potatos grown in Malta unless they are accompanied by the certificate of health prescribed in the Destructive Insects and Pests Order of 1922. The order came into operation on June 21, but it allows for the landing of Potatos shipped from Malta prior to that date.

Horticultural Club Outing.—On Thursday, July 14, the members of the Horticultural Club will visit the Royal Horticultural Society's Gardens at Wisley. The journey will be made by charabanc, starting at 10.30 a.m. on the Embankment, outside Charing Cross District Railway Station, and thence to the Hut Hotel, Ripley, for lunch. After tea, the return journey will be made about 6.30 p.m. Applications for tickets should be made to the Hon. Secretary, Mr. G. F. Tinley, 855, London Road, Westcliff-on-Sea, Essex.

The Golden Valley, Hindhead.—We learn that the vendors of the ninety-six acres composing the lovely Golden Valley at Hindhead, Surrey, have extended by a fortnight the time of completing the purchase (see p. 440, June 18). The price at which Dr. Marie Stopes prevented the area from falling into the hands of the builders was £5,650, and towards this amount about £4,300 has been collected and promised. All who are interested in saving this famous beauty spot, and placing it under the National Trust, are urged to send donations to the Hon. Treasurers, or Mr. S. H. Hamer, The National Trust, 7, Buckingham Palace Gardens, S.W.1.

An Advertising Postmark.—The horticulturists of the Rose-growing town of Sangerhausen, in Germany, combined together and had a post-mark made, "Sangerhusen, the Town of Roses," which the postal authorities consented to use on all out-going letters, the cost being a tax of five marks per quarter. With the fall in the value of the mark, however, and in consequence of a different method of estimating the amount of the correspondence on the part of the Company handling these postal advertisements, the price has been raised to 150 marks per quarter, or 600 marks per year, and it has been decided to discontinue it.

Insect Pests of the Empire.—The Empire Marketing Board has provided funds for the establishment of a station at Farnham Royal under the direction of Dr. Marshall and Dr. Neave, of the Imperial Bureau of Entomology, to discover, breed and dispatch over the Empire parasites which keep down the number of harmful insects. Such stations have already been established in the United States, but it is a new departure for the British Empire. The Empire Marketing Board was led to set aside funds for this purpose by two considerations. First, the importance of our imports of foodstuffs and raw materials, which are directly affected by the present inadequacy of entomological research, and secondly the keen interest of the Governments of the Empire overseas, who are themselves already beginning to contribute directly to this entomological work. The laboratory will be under the direction of the Imperial Bureau of Entomology, and a beginning has been made with the construction of insectaries and with the laying out of the grounds with plants and trees required for investigation.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Botany of the Antarctic Voyage, II. Flora of New Zealand.*—By J. D. Hooker, M.D.; 4to.; Part 1, Reeve and Co.—At length we may hope for some connected account of the botany of our Australasian Colonies. Dr. Hooker, whose energy and knowledge so eminently qualify him for the task, has now, with the aid of the Lords of the Admiralty, taken up New Zealand, of whose vegetation five parts of the present work will give ample details. It is to be hoped that the floras of Tasmania and Australia itself will follow in succession. The work is written in good plain English, with a view to the convenience of colonists, but without, on that account, being rendered in the smallest degree unscientific. Quite the contrary. It contains all the Natural Orders up to Saxifrageae; is illustrated by twenty excellent plates, and, as far as it goes, gives the New Zealand colonist the means of knowing all that Europeans can tell them concerning the singular vegetation of their island, which, "although luxuriantly clothed with vegetation, possesses remarkably few kinds of plants; the little island of Tasmania has nearly twice as many flowering plants, though fewer flowerless ones." Let us add, that the beautiful execution of the work renders it a "library book," even for those who are not interested about natural history. *Gard. Chron., July* 3, 1852.

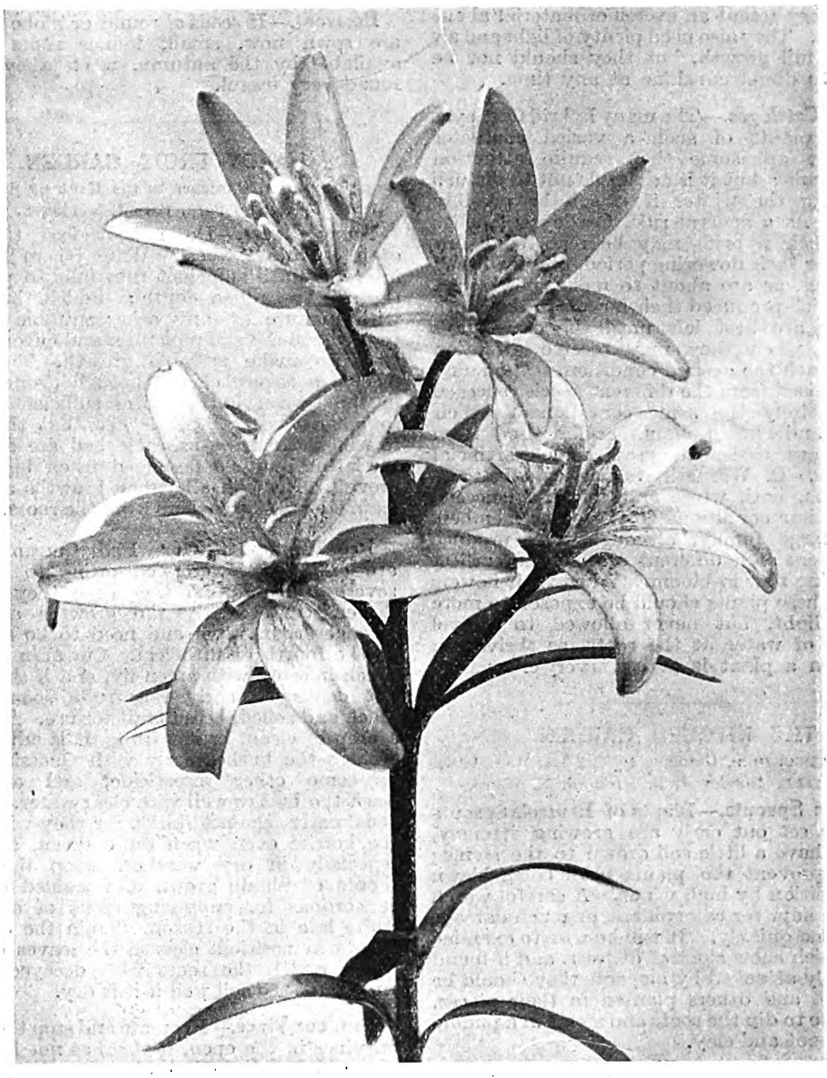


FIG. 1.—LILIUM CONCOLOR, DROPMORE VARIETY.

R.H.S. Award of Merit, June 21. (See p. 6).

Appointments for the Ensuing Week.—SUNDAY, JULY 3: Wakefield and North of England Tulip Society's meeting. MONDAY, JULY 4: Post Office Savings Bank Horticultural Society's show; Romsey Gardeners' Association's meeting. TUESDAY, JULY 5: Royal Horticultural Society's Committees meet; Royal Agricultural Society of England show (five days); Royal Caledonian Horticultural Society's meeting. WEDNESDAY, JULY 6: National Rose Society's provincial show in conjunction with Cheltenham Spa Floral Fête (two days); Croydon Horticultural Society's show; Nottingham and Notts. Chrysanthemum Society's meeting. THURSDAY, JULY 7: National Sweet Pea Society's show at the R.H.S. Hall (two days); Stoke-on-Trent Horticultural Society's show (three days). FRIDAY, JULY 8: Bath and District Horticultural Society's show (two days); Royal Horticultural Society of Ireland meeting. SATURDAY, JULY 9: Windsor, Eton and District Rose Society's show; Leigh-on-Sea Horticultural Society's show; British Mycological Society's Phytopathological meeting at East Malling.

Publications Received.—*Report on Celery Blight and its Prevention*, by H. H. Stirrup and J. W. Ewan; Midland Agricultural and Dairy College, Sutton Bonington, Loughborough.—*Encyclopedie Biologique* I: Les Plantes Alimentaires chez tous les peuples et à travers les Ages, by D. Bois; Paul Lechevalier, 12, rue de Tournon, Paris, price 75 francs.

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon, Bletchley Park, Bletchley, Bucks.

Odontoglossum Rossii.—This interesting Mexican Orchid should receive attention when it has finished flowering. Although this species and other Odontoglossums with small pseudo-bulbs, such as O. Cervantesii, O. Krameri and O. Oerstedii, succeed well under the treatment recommended for all the cooler members of this large family, it is advisable to grow them in shallow pans, as they resent an excess of material about their roots. They also need plenty of light and air whilst in full growth, but they should not be exposed to direct sunshine at any time.

Hybrid Cattleyas.—The many hybrid Cattleyas comprise plants of such a varied character that there are some that require attention at all seasons; but it is advisable not to disturb any during the winter if it can be possibly avoided. As a general rule, Cattleyas, Laelias and all their hybrids may be repotted a few weeks after their flowering period, provided they are making, or are about to make, new roots. Plants which produced their flowers in the depth of winter are best left until the early days of spring, when they may receive attention as they reach the desired condition. The many hybrids raised from the different species succeed under precisely the same conditions as their parents, and, being plants acclimatised from infancy, are easier to grow under artificial conditions. C. Warneri, its variety alba, and its hybrids, both white and coloured, succeed under similar conditions to the other members of this large family, although they produce their flowers at a different season, the earliest plants being now in bloom. When their flowers are over these plants should be exposed to more air and light, but never allowed to shrivel for want of water at the roots, as shrivelling even when a plant is at rest, is very exhausting to it.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Brussels Sprouts.—Plants of Brussels Sprouts that were set out early are growing strongly, and may have a little soil drawn to the stems; this will prevent the plants from being blown out of position by high winds. A careful watch should be kept for caterpillars, or much damage will be done quickly. It will be wise to examine plants which show signs of distress, and if found to be badly attacked by maggots they should be pulled up, and others planted in their places, taking care to dip the roots and stems in a puddle made of soot and clay.

Celery.—So soon as strong plants are ready, plant them forthwith in well-prepared trenches, as advised in an earlier calendar. The plants should receive as little check as possible. Dust them with old soot immediately to prevent attacks of the Celery fly. Anti-Fly Powder, or anything which makes the leaves distasteful, answers the same purpose.

Celeriac.—This useful vegetable should be planted out on well-prepared ground, enriched with well-rotted manure. The plants should be set in rows made about two feet apart, and at a distance of one foot apart in the rows. Water should be given the roots liberally throughout the growing season, and the soil stirred occasionally with the Dutch hoe. As the foliage is likely to be attacked by the Celery fly, the same precautions should be taken to keep insect pests in check as advised for Celery.

Leeks.—Where this vegetable is being grown for exhibition and, presuming the plants are growing in well prepared, enriched soil, the necessary cardboard bands or collars should be placed around the stems. The collars should be about five inches to six inches in depth. When used properly, these cause the centre of the plants to lengthen, and should be raised from time to time until a sufficient amount of stem is blanched, sixteen inches being a good average length. Boards should be placed along the sides of the row, five inches from the plants, to keep the soil in position, which should be added and placed around the stems each time the collars are raised. So soon as the last lot of soil has been placed in position, it is wise to cover it with a small quantity of straw to prevent grit or dirt from splashing into the tops of the plants and thereby disfiguring them. All watering and feeding of the roots should be done outside the boards, in order to keep the stems as dry as possible. Diluted liquid manure from cowsheds, etc., is an excellent stimulant for Leeks.

Beetroot.—If seeds of round or globe varieties are sown now, small, tender roots will be available by the autumn, when they will be found very useful.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Young Trees.—Do not neglect the roots of late-planted trees. Water them freely at intervals until sufficient rain falls to penetrate the soil to a good depth; mulch the ground with manure or any other suitable material to preserve the soil moisture, and encourage the trees to make suitable growth. Trees that receive a severe check through drought early in the season fail to form sufficient growths to make healthy heads. See that the stakes to which the trees are attached are sound, or the latter may be damaged when high winds prevail. Remove all young growths along the main stems, also suckers from the roots.

Red Currants.—Our Red Currant bushes are only lightly cropped owing to the very severe frosts during the time they were in flower, consequently the growths are much stronger than usual and need to be shortened to the fourth or fifth leaf. Currants are often much infested with green fly, and if this pest is not destroyed early the fruits soon become black and soiled, being unfit for use. To ensure a crop of clean, bright fruits, it is advisable to syringe the bushes early with Quassia extract or some other insecticide, and afterwards wash the bushes well with clear water. Net the beds early against birds, for they will devour the berries even when quite green, and more especially in dry weather. Stop the lateral shoots of plants grown and trained on walls as cordons for supplying crops of extra fine fruits late in the season. Train the extension shoots in position, cleanse the leaves of insect pests, mulch the roots with decayed manure and water the soil well if it is dry.

Outdoor Vines.—Regulate and stop the laterals on vines in the open, if this has not been done already. Pinch the laterals a couple of joints beyond the bunches, and secure the young leaders, which have not reached their limits, to the wall or fence, to prevent them being damaged by storms. Make sure that all the young growths bearing bunches are suitably secured to the walls, also thin the berries early and water the roots with liquid manure; a little guano is also a good fertiliser for vines.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Figs in Successional Houses.—If all has gone well, the trees in these houses will now be supplying ripe Figs. A drier atmosphere should be maintained by a partial discontinuance of the use of the syringe, but the floors, walls and other bare surfaces should be damped regularly with diluted liquid manure once or twice a day in fine weather, and on no account should the roots lack moisture at this stage. Gather all ripe fruits before syringing is done to prevent them cracking. If required for home use the fruits should be allowed to hang fully exposed to light and air until they are quite ripe and well coloured, but if they are to be packed for travelling a long distance, they should be gathered in a tender but not ripe stage. The house should be kept somewhat dry and airy, and the fruits should be gathered at least a day or two before they reach maturity. Late trees from which only one crop of fruit will be taken should have an abundance of fresh air and copious waterings at the roots. Pinching of the shoots is not necessary, and any fruits which show after the main crop is thinned should be removed.

Pot Vines.—Vines intended for starting next November will now be plumping up their buds, and the canes will soon be changing colour, indicating the first stage of ripening. Do not force the vines at this stage but continue to feed the roots and syringe the foliage. More air should be admitted gradually, and the house kept slightly drier through the night. If the canes have been stopped at six feet or nine feet, according to requirements, so soon as they were coloured their whole length, a few of the laterals may be removed, commencing at the base and working gradually upwards, leaving a few laterals near the top to run wild. Take care to preserve each main leaf. Many growers place the canes in the open to ripen; if the season is good and the vines can be secured to a south or west wall, the best results follow keeping them in a house and ventilating precisely as in the case of early vineries.

Young Vines.—Vines raised from eyes of the current year will soon have filled the seven-inch pots in which they are growing with roots, and the pots may be raised gradually above the plunging material, when the roots will require more frequent supplies of water and feeding with diluted liquid manure. If too crowded, remove the more forward specimens to other positions where they can have the full benefit of sun-heat with plenty of light and more air day and night as the canes show signs of ripening. Canes intended for planting may be stopped when they have made six feet of growth. It is very important to have a few plump buds at the base of the vine. All laterals except a few at the top should be kept pinched at the first leaf.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Cyclamen latifolium.—Young plants raised from seeds sown last August should be ready for their final potting, but before carrying out this operation see that the plants are free from mite and aphis. Thrips are also troublesome to Cyclamens, and where either of these pests is detected it will be necessary to dip the plant twice in nicotine emulsion, using the specific strictly in accordance with the makers' directions. The rooting-medium for this potting may consist of fibrous loam, leaf-mould and manure from an old Mushroom-bed mixed with old bricks broken up very small, and a moderate sprinkling of rough sand. It is important when potting not to bury the corms too deeply; one half of the corm should be above the surface when the work is completed, otherwise damping of the flowers in the autumn will follow. Cold frames may be used for the growing of the plants for the next few months, but some prefer growing them near the roof-glass in a light, span-roofed house, where the air circulates freely. The young plants should be shaded from bright sunshine during the hottest part of the day, and where this can be done by a moveable shade better results will be forthcoming than using permanent shading. Copious supplies of rain water are needed at the roots when the receptacles are well filled with the latter.

Euphorbia pulcherrima (syn. Poinsettia).—When the plants have filled their receptacles with roots, transfer them to larger ones to suit the various stages of growth. The compost may consist chiefly of good, open loam, with a little spent Mushroom-bed manure and sand added to keep the texture open. The young plants should be grown in plenty of heat and moisture in their early stages, but once they are sufficiently advanced to be potted finally they should be gradually hardened and grown under cooler conditions for the next two months. Euphorbia jacquiniaefolia requires much the same treatment as the Poinsettia. Continue to propagate cuttings of both species as they become available; these cuttings will make useful plants for decorating purposes if grown in small pots.

Perpetual Carnations.—The latest batch of these plants should be ready for placing in their flowering pots. The compost recommended in a previous calendar may be used, and it should be in a suitable condition to allow it to be made tolerably firm by ramming. The earlier potted plants may now be stood out-of-doors on a bed of ashes; before doing this, we erect a skeleton frame to protect the plants from heavy rains. Although Carnations should never be allowed to suffer from lack of moisture at the roots, an excess of water at this stage of growth would prove very harmful to them. Spray the plants in the evenings occasionally with weak soot-water to keep red spider in check.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Pruning Flowering Shrubs.—It is very important to prune flowering shrubs at the proper time to obtain the best possible display of flowers; in fact, pruning at the wrong time may, in some cases, entirely ruin the floral display. Flowering shrubs generally fall into three classes, one in which no regular pruning is required beyond the cutting out of dead wood and an occasional thinning of the shoots to prevent over-crowding; it is wise to attend to this every year and not allow the plants to get out of hand; the second class includes all shrubs which produce their flowers on shoots made the previous season; all such shrubs should be pruned so soon as possible after thay have finished flowering, and thus allow them plenty of time in which to make and mature the new growths. The pruning in this case usually consists in the removal of all or a portion of the old flowering wood, always bearing in mind to allow for the necessary extension of the plant or plants being dealt with. Good examples of this class of shrub are Prunus triloba var. fl. pl., P. Persica, all the Ceanothus that flower during spring and early summer, Philadelphus, Diervillas, etc. The third group includes shrubs which flower on the current year's wood; these should be pruned during the spring just as they are starting into growth. Good example of a popular shrub in this group is Ceanothus Gloire de Versailles. Close observation soon enables the grower to determine the best way and the proper time to carry out pruning operations.

Lupinus arboreus.—The Tree Lupin and its fine white variety, Snow Queen, are specially suited to planting in hot, sunny situations, on poor, stony ground; in the warmer parts of the country they quickly make very large specimens. These Lupins are easily raised from seeds and may also be increased by means of cuttings. Nearly all the perennial Lupinus are very suitable for planting in large masses in the semi-wild parts of the garden.

Propagating Hardy Shrubs.—The general run of hardy flowering shrubs may be propagated from cuttings inserted out-of-doors, or in cold frames during the autumn. Most of them can, however, be successfully propagated indoors at this time by means of half-ripened shoots inserted in a close propagating case, using for this purpose the firmer, twiggy, side growths when they are about four inches in length. The cuttings may be inserted in pots of sandy soil, or dibbled into specially prepared beds. By propagating in this way a season is gained, for in most cases so soon as the cuttings are rooted and hardened off they may be planted out in the reserve garden, and some of the plants will be large enough to be planted in their permanent quarters during the autumn or following spring.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Winter-flowering Plants.—All plants, such as Gesnerias, Browallias and Begonia Gloire de Lorraine, which are required to give a display of flowers during winter should now be well-established, and if necessary, repotted and kept growing freely. Any flowers should be picked off as they appear. Winter-flowering Pelargoniums, which should now be in six-inch pots, may have any straggling points removed in order to keep the plants compact. When well-rooted in their flowering pots, they should be given assistance either by top-dressing them, or feeding the roots with diluted liquid manure. Cuttings of Coleus thyrsoideus may still be inserted to produce small plants, and the earlier rooted plants repotted singly. When the latter are again growing freely, pinch the shoots to ensure shapely and bushy specimens. Cinerarias and Primulas are ready for transferring to four-inch pots, where they will grow satisfactorily in a cool, shaded house.

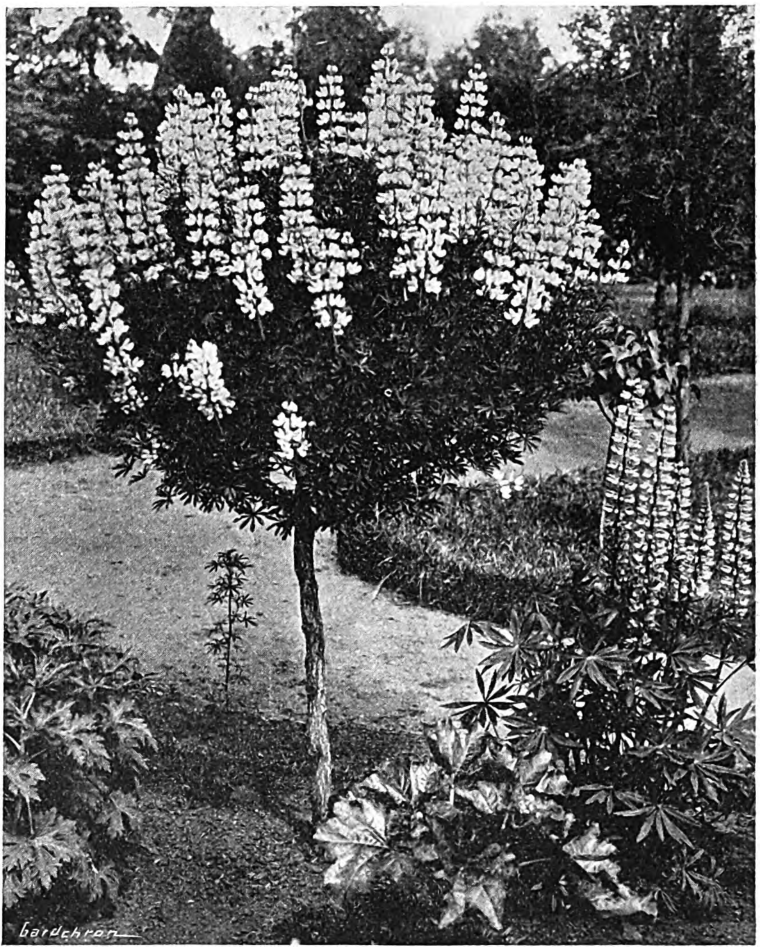


FIG. 2.—STANDARD TREE LUPIN AT SANDILANDS, BOAR'S HILL, OXFORD.

(see p. 6.)

Perpetual Carnations.—The plants which were transferred to six-inch pots early in June are growing freely, and the grower whose object is to produce these valuable flowers in mid-winter should continue to stop the leading shoots of certain varieties until the middle of July, while other kinds of a stockier and slower growth should be allowed to develop from now onwards without interference, as they take considerably longer time to produce flower buds. The plants should be staked at an early date in order to keep the growths erect, and while many inventions are put forward for this purpose, few of them answer so well as the old method of placing three stakes in each pot, and these looped around as growth proceeds with soft, green twine. In the south, many growers stand the plants in the open, but this is not recommended for northern growers; an airy house, without fire-heat, is undoubtedly the best place in which to grow them during the summer, where they can be regularly attended to and when necessary fumigated to keep them free of insect pests. Older plants in the Carnation house are now producing large quantities of flowers, and a good deal of time is required to remove the side-shoots, and keep the plants well supported. Top-dress the roots at regular intervals with a Carnation manure to keep the plants vigorous and healthy.

Early Seed Potatos.—The earliest Potatos are quite ripe enough for lifting, and in order to ensure a supply of seed tubers for next season a selection from the very best cropping roots should be made, and the sets placed direct in boxes or seed trays. It is sometimes recommended to leave the tubers in the open air, but when the sun is scorching hot much damage may be done by leaving them fully exposed, as the skins harden too rapidly; samples shown to me last season were rendered useless, or nearly so, by leaving them fully exposed, and it is better to set them in a shady place to allow the greening process to develop gradually. The borders of these early Potatos will be in good condition for several catch-crops, and any of the following may be planted with every prospect of success, viz., Vegetable Marrows, Dwarf French Beans, early Carrots, early Beet, Spinach and Turnips. Should the soil be very dry at sowing or planting time, the drills should be well-watered before the seeds are inserted; the dry soil which covers the seeds will help to conserve the soil moisture until germination has taken place.

FLORISTS' FLOWERS.

BORDER CARNATIONS.

There are generally new varieties of Carnations to be seen on some of the stands at the Chelsea Show, which are intended for distribution in the autumn, and although there were fewer this year than is usually the case, I noticed one or two white ground Fancies which will probably please those who admire these beautiful florists' flowers.

The one I liked best, named Scarlet Lancer, is a fine, bold flower, of excellent shape, profusely marked with scarlet, on a strong, upstanding stem. This variety should prove equally good for pot or border cultivation. Another named Bookham Beau, has markings of a shade somewhat difficult to describe, magenta-crimson, perhaps, describes it best.

The variety Fred Archer, which was sent out recently, is a strongly marked rose variety; I do not remember having seen it at an exhibition before. It would, of course, be impossible to include every fresh variety raised in the first class novelties, but I sometimes find a first-class variety slips into the general list of a catalogue, and a keen collector will realise the fact.

Dorothy Murray, which was awarded a First Class Certificate last summer at the Carpenters' Hall, London, is another choice flower in this class. The crimson-purple markings are not heavy, and although not over large, the flower is of very good shape. To those who like dressed blooms it will appeal greatly, as it lends itself admirably to dressing.

There will, no doubt, be seedlings of all classes at the summer show, but the white ground class has been augmented recently by more outstanding varieties than any other, except the Fancies —yellow grounds as good as Viceroy are always in demand—but this is a very strong class as it stands, and raisers naturally incline to send out varieties in other classes to bring them up to the same strength. The pitfall which seems specially to apply to white grounds is the danger of too-much-alike varieties, and there is no doubt it is hard to avoid. There are certain very distinctive flowers, such as Ravenswood, Steerforth Clove, Fair Ellen, Mrs. Hawksbee and Mrs. E. Charrington, to quote at random, but there is so very little colour scope that in some cases no one but a Carnation specialist would be able to differentiate the varieties.

Raisers certainly benefit by sending out flowers with decided and unique markings, for the ordinary amateur requires varieties he can place at a glance, also those which will contrast, and be effective in the open border, while a collector will not discard an established favourite for a novelty with practically similar colouring, unless it is, obviously, very much superior in other respects.

There is so much more scope for colour combinations in yellow ground Fancies that, as a rule, sameness is avoided, also the grounding is of varying shades—maize, buff and apricot, besides all tones of yellow. A pleasing novelty in this class is King's Jester, buff, edged and marked red and lavender. It was only sent out last autumn, but I saw the plants in bloom previously, and was much impressed with them. My own layers have grown well and thrown up strong flower spikes. Duke Ivor, a very handsome bloom, with heavy carmine-crimson markings of the Viceroy type, is another newcomer which should prove welcome to those who exhibit. It is curious how certain varieties are always exhibited; Lieut. Shackleton, Viceroy, Pasquin, Elizabeth Shiffner, Fair Ellen, Mrs. E. Charrington, Linkman and Gordon Douglas being certain to appear, age not seeming to affect the constitutional vigour of those sorts which have been with us many years—for plants, like people, have different terms of life, and Carnations are very variable in this respect. I find some varieties petering out after a few years, into very feeble specimens. One can understand how it is that Lieut. Shackleton and Elizabeth Shiffner retain their place, because they are still unique in colouring, and I do not know a more beautiful flower than the former. Light soil suits this variety excellently, and amateurs who can grow it in the open border will be repaid by immense blooms. Bookham Belle and Highland Mary are two other very perfect and lovely sorts which intending growers will do well to note.

Among selfs a good crimson is Joan Wardale, particularly in soil on the heavy side, and those who require a lovely salmon-rose should grow Nautilus. It is a really good variety, and splendid for the border or exhibition, growing very strongly. It promises to prove a standard variety in its colour. Delicosa is another perfectly-formed self flower of soft lilac-rose colouring and a plant of good habit.

The season for exhibiting, with all its hopes and fears, is with us, and those who are showing for the first time often find a difficulty in arranging their vases so that the colours harmonise, and show to the best advantage.

It is not wise to put white next to dull crimson following on with a shade like E. G. Quick, for instance. There is no relief—scarlet, mauve, rose, crimson, yellow, purple, apricot could follow, while white, or other shades, may be contrasted according to their tones. Dissatisfaction is often expressed by exhibitors at their non-success, and in some cases it is partly their own fault, for tasteful staging appeals to the judges, and where other things are equal, they will naturally award the prizes to those who have studied this art.

And here I should like to say a few words about the selection of judges for particular flowers. I think, and I feel sure the majority will agree, that a judge of Carnations should be a practical grower. Only in this way can they understand or appreciate the true form and colour which should pertain to each variety or be able to allow for certain differences which are liable to occur in different circumstances, or the difficulties which have been overcome in bringing some blooms to perfection. True judging of any flower can only be gained by knowledge of its habits and peculiarities *J. B. Wells.*

FLOWER GARDEN.

TREE LUPINS.

The Tree Lupin illustrated in Fig 2, represents a successful effort on the part of Mrs. Grierson of Sandilands, Boars Hill, Oxford, to make Lupinus arboreus live up to its specific name. There are many gardeners who, though they appreciate fully the beauty of the Tree Lupin at flowering time, have abandoned, albeit reluctantly, the cultivation of this fine garden plant. Brave and opulent though their showing be at flowering time, the dishevelment which follows when the branches bend down and break with the ample load of pods, makes the plants unsightly. Even though the bushes are severely pruned after flowering, the unsightliness is but little less and, morevoer, the plants, never long-lived, seem to resent the heavy pruning which the gardener who cares for tidiness is apt to give them.

When, however, the Tree Lupin is trained as a standard, these disadvantages do not obtain, for the branches may be shortened so soon as the full flowering is over, and so treated the plants have a less desolate appearance in autumn. The prolific self-sowing of the plant provides, moreover, for relays to take the place of those which fail to survive the winter.

THERMOPSIS LANCEOLATA.

This useful, early-flowering perennial is a native of Siberia and Alaska, and yet, despite its obvious hardiness, it has the bad habit of dying out suddenly, which no doubt accounts for its comparative rareness in gardens.

Its closely-packed racemes of large, golden, Pea-like flowers are produced at the top of erect, simple or branching stems, which are clothed with alternately disposed digitate leaves borne on short stalks up to one inch in length, at the base of which are two large, ovate stipules.

The leaves are composed of three cuneate-lanceolate leaflets, about two inches in length, and of a light green colour, the undersurface and margins being furnished with silky down.

This Thermopsis should be planted in deep, light and well-drained soil, in a sunny situation, under which conditions it will produce an abundance of growths, terminated by flowers during May and June. It spreads by means of underground runners, and though free of growth when established, it does not transplant well, so that the raising of fresh plants from seeds is preferable to division. It is figured in *Bot. Mag.*, t. 1,389, as Podalyria lanceolata, but both illustration and description by no means do the plant justice.

DORYCNIUM HIRSUTUM.

Sometimes referred to as Lotus hirsutum, this is a useful plant for hot positions and light, sandy soil. It is a Leguminous plant of semi-shrubby habit, forming a low, close-growing bush, about one foot high, the whole plant being densely covered with soft, silky tomentum. The leaves are clustered closely together on the stems; they are trifoliate, and have at their base two stipules similar in appearance to the leaflets, which are ovate, sharply-pointed, and light greyish-green in colour.

The flowers are produced freely from June to August in terminal heads on slender stems about two inches in length. The corollas are white or tinged with pink, and are twice the length of the red-tinted calyces. In favourable seasons a quantity of seed is produced, providing the best means of increasing this attractive plant. *A. G. F.*

ANCHUSA ITALICA.

There are several varieties of this popular plant, including the well-known Dropmore variety, Opal and Pride of Dover, as well as a white-flowered form.

The blue varieties are unrivalled for grouping in the mixed border, or for furnishing large lawn beds, while bold groupings are very effective in the semi-wild parts of the garden.

Naturally, this plant, or at least the varieties, are, especially on heavy soils, short-lived perennials, and frequent complaints that they die out is due to the fact that they are not frequently propagated by means of root-cuttings. Root-cuttings will succeed at almost any time, and if they were not secured during the autumn, when the plants were being moved, they may be obtained when the plants have finished flowering and are being cleared from the beds. Pieces of roots, about three inches in length, are suitable and should be laid in closely in boxes of sandy soil. On light, sandy soils they may be lined out direct in the ground. The stock raised in boxes should be planted out so soon as they start to grow; by autumn they will be ready for transference to their flowering quarters. *C.*

BULB GARDEN.

LILIUM CONCOLOR DROPMORE VARIETY.

The lovely miniature Lilium concolor is well adapted for growing in cool and shady spots on the rockery. The type bears orange-coloured flowers, but is undoubtedly superseded by the Dropmore variety (Fig. 1) which received the R.H.S. Award of Merit on June 21, when exhibited by Mr. Amos Perry, Enfield.

The flowers are supported on stout stems from one-and-a-half foot to two-and-a-half feet tall, each inflorescence bearing from three to five brilliant, scarlet-orange, upright flowers in terminal heads.

The conical-shaped bulbs are each capable of producing from two to four, and occasionally five, spikes of flowers. The irregular, spreading, lanceolate leaves are deep green and slightly pubescent.

The variety promises to prove one of the most decorative of hardy border Lilies. It was raised by a well-known Canadian amateur, and the stock came into the possession of Mr. Perry in 1924. *W. L.*

SNOWDROP SEEDS AND SEEDLINGS.

THE notes that appeared in the issues of the *Gard. Chron.* for March 26, p. 210, and April 16, p. 272, indicate that interest in the question of the seeding or non-seeding of Snowdrops is still keen and unsatisfied. After the publication of my notes (*Gard. Chron.*, January 30, 1926, p. 84), I had hoped to see the observations of others recorded. Instead, a number of growers sent me green capsules. These were kept for some weeks and were then depodded, and I regret that the thought of recording the percentage of seeds in them did not occur to me until too many lots had been depodded. Roughly, my observations are that whether the capsules were from Hartland, North Devon; Ro-Wen, North Wales; Snittlegarth and Blaithwaite, Cumberland; Monreith, Wigtownshire; Culzean, Ayrshire; or gathered here, there appeared to be little difference in the size of the seeds, but the size of the capsule and numbers of seeds in a capsule varied greatly. For instance, the capsules from Culzean contained from one to six seeds (one pod contained nine seeds), with an average of 4·19; Snittlegarth capsules contained from one to four seeds, average 2·27; while capsules grown here from roots of G. nivalis, sent from Culzean in 1925; produced from two to five seeds, with an average of 4·7. This year, this last group of roots has produced a very large number of capsules, and on examination many have been found to contain twelve seeds. It is still uncertain whether all of these will ripen.

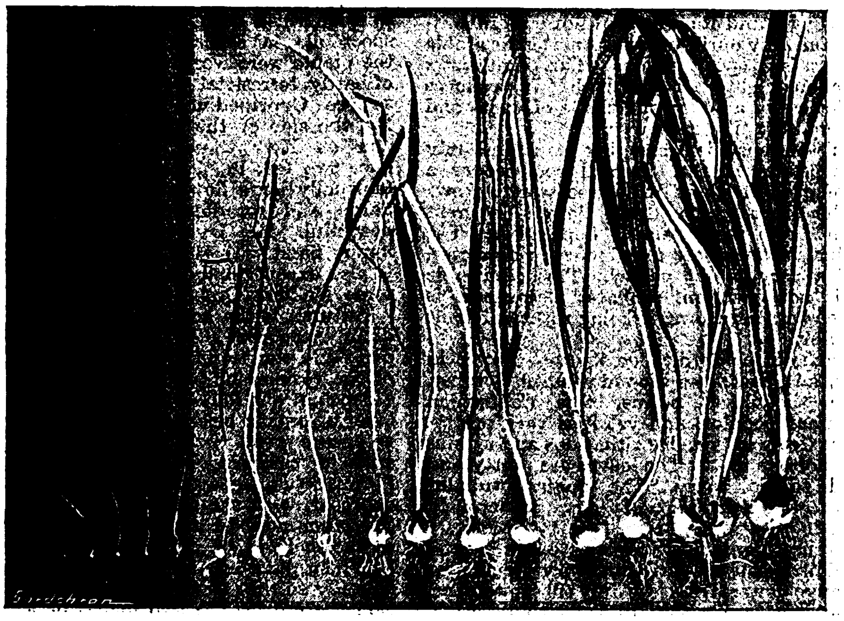


FIG. 3.—SEEDLING SNOWDROPS.
The five on the left are seedlings of this year.

Last year I had the opportunity of visiting a wood at Snittlegarth, in Cumberland, where formerly I had known the ground to be white with Snowdrops each spring. When I saw it in late May, the foliage had, to a large extent, died away, and comparatively few capsules were obtainable. On proceeding to lift a clump for examination of the bulbs, I found that many of these had been apparently squeezed up to the surface and very small effort was required to dislodge a few. Doubtless this dislodgment of bulbs is of annual occurrence by the scratching of birds and other natural means, and so the bulbs become dispersed over a greater area. The appearance of the mass of bulbs was quite different from anything I have yet found here.

Mr. Harrison has this spring sent me from Culzean a couple of clumps of Galanthus nivalis, as lifted. These also show the appearance of bulbs squeezed to the surface, but they also show unmistakable evidence that some of the bulbs in the clump are from seeds produced and sown last year. This evidence has been returned to Mr. Harrison for his inspection.

In a former note I mentioned that bulbs sent me by Mr. Harrison and *Formakin*, in 1925, had been planted in lines, and that half was to be left to insect or wind fertilisation, and the other part was to be, if possible, artificially pollenated, in addition to any insect or wind fertilisation. This I tried by inserting a fine, camel-hair brush into the flowers produced on the nearer part of the lines. The bulbs sent by Mr. Harrison were the ordinary G. nivalis, while those sent by *Formakin* were a later variety of G. nivalis. When the former were in full bloom the latter were little more than showing the white of their flowers. This gave opportunity for insect pollenation over a somewhat lengthy period, but neither from this circumstance nor from the attempted artificial pollenation, could any definite increase of capsule formation be noted. This year, those sent by Mr. Harrison started to flower on New Year's Day, and capsules have been formed freely on them (as already noted), also on the late variety from *Formakin*. This seems to be a year of plentiful production of Snowdrop seed in our locality.

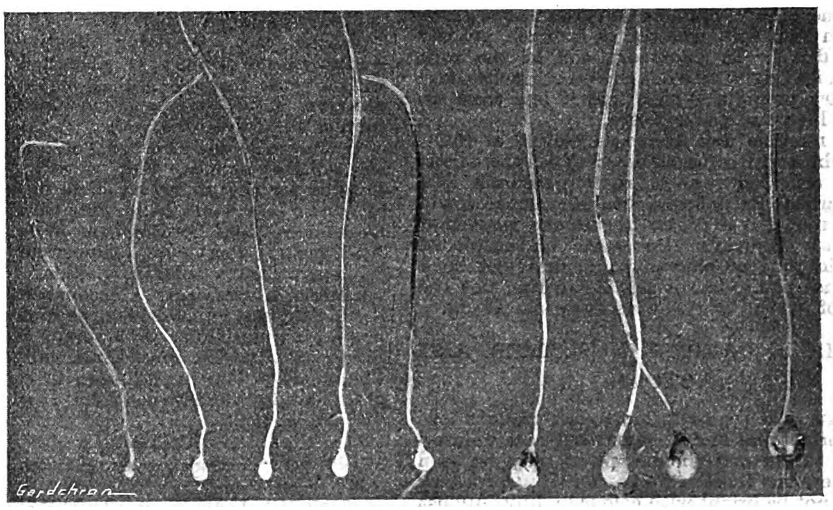


FIG. 4.—SEEDLING SNOWDROPS SHOWING THE SEED CASES.

Mr. Harrison's failure to get apparently good seeds to germinate even when gathered and hand-sown, raises the question whether Snowdrop seed has a long or a short period of viability, or whether in this matter also we have more to learn. The seeds from the capsules sent to me in 1926 are still unsown. They will, I hope, be tested against 1927 seeds, sown as soon as gathered. I find in some notes, written in October, 1905, by the late Mr. W. B. Boyd, of Faldonside, Melrose, the following :—"I may mention that the garden and grounds at Ashiestill are among the few places in our part of the country where Snowdrops come up freely from self-sown seeds, and the soil is a heavy clay. This is all the more remarkable since in my own garden at Faldonside, where the soil is very similar, and a great number of varieties are grown, I very rarely see a self-sown seedling from a Snowdrop."

During the last seven years, I have gathered each year a few Snowdrop seeds and sown them, so soon as gathered, in a pocket in my rockery, always in the same pocket. It lies about ten inches above the adjoining path, so it is well-drained and the soil becomes very dry in summer. Last year a few of the resulting bulbs flowered. This year more have done so, and six capsules have been formed. As a matter of interest, I lifted, on May 6, some of those seedlings. The enclosed is a photograph (Fig. 3) of all the seventeen plants growing in a space of six inches by six inches, arranged in order of size of bulb. I think it is clear that Snowdrops both produce seeds and grow from seeds fairly freely. The two bulbs at the right of the illustration are splitting up into two and three bulbs. The five at the left are seedlings of this year, with the seed-case still attached to the stems, except in the case of No. 2 from the left. Measuring from the base of the bulb in each case, the seed-cases are from 9/32 to 17/32 of an inch up the stem. The illustration in Fig. 4 shows the seed-cases more distinctly. Why Snowdrops should in some districts fail to produce viable seeds or should fail to grow freely from seeds is still not clear. So far, I have been unable to arrive at a more satisfactory conclusion than that reproduction by seeds depends on climatic conditions, particularly rainfall, as suggested in your issue of January 30, 1926, p. 83.

One other point is suggested by the correspondence received. Most plants, the seed behaviour of which I can recall, keep their flower stems green until the seeds are ripe and shed, but the Snowdrop does not do this. In the words of one correspondent: "the Snowdrop capsules, from my observation, don't open through drying but rather through swelling with dampness." Examining my Snowdrops, G. nivalis, in the first week of May, I find that in every case (except the late-flowering variety) the flower stem has withered away, leaving large green capsules detached from the flower-stems, on the surface of the ground, under a network of withering and drying leaves. The seeds in these severed capsules are still of milk-white colour but not yet of full size, as when ripe. So far, observation here agrees with that of my correspondent, but whether the bursting comes from dampness or ripening decay, I cannot say. My recollection seems to be that the capsules do not become larger after severance, but that in a few weeks they become yellow, and the outer case then gradually opens and sloughs away, leaving the ripe seeds on the ground. This shedding of unripe capsules has been remarked on by several correspondents. *P. Murray Thomson, Hereford.*

ALPINE GARDEN.

GENISTA TINCTORIA PLENA.

Although the double Dyer's Broom has been cultivated in our gardens for many years, it still retains its popularity as an almost indispensable subject for the good-sized rockery, as well as for the large rock garden.

It is a pleasing plant when in full bloom, with its graceful, double flowers of bright golden yellow, and is an excellent subject for trailing over a bank or large stones; it is not so rampant in growth as to become troublesome, and may be kept cut back if desired, while its height is only about six inches. It is also an excellent subject for covering a rough bank.

The plant usually flowers in July and August, but in some seasons is a little earlier, and the season may be extended beyond August, this depending on its position and the climate of the district. This Broom may be planted now to bloom next season, or the planting may be deferred until spring. I prefer planting pot specimens rather than those from the open ground.

PATRINIA PALMATA.

Patrinia palmata is one of the most satisfactory and distinct members of the genus, but is seldom seen in gardens, and is not plentiful in nurseries. It is a dwarf plant, suitable for the rock garden or moraine, with distinct, palmate foliage, and loosely-arranged flowers of bright yellow.

The late Mr. Reginald Farrer, who had strong likes and dislikes to certain plants, thought very little of the Patrinias, apparently owing to the likeness of some of them to the Valerians, and P. palmata shared the depreciative remarks he made about the taller members of the race. It is true that P. palmata will grow about a foot high in rich soil, whereas it is much prettier when dwarf. In poor, dry soil in the rock garden its height may not exceed six inches, and in a dry moraine I have had it less than six inches high and quite pretty.

The moraine was composed mainly of whinstone chips with some old lime rubbish and a little sandy soil below as a rooting medium. In my garden P. palmata has increased slowly at the root; it is pretty in summer, associated with early Saxifrages, Drabas, etc., and succeeded them in time of blooming. It may not be a first-class plant, but it has its merits, not the least of which is its hardiness.—*S. Arnott.*

THE ROCK GARDEN IN SUMMER AND AUTUMN.

When spring is over, most rock gardens lose their brightness and become dull and uninteresting. Here and there a plant may be seen in flower, but there is no reason why a rockery should not be bright with colour in July, August and September. It is because the later-flowering alpines are too little known that the average rock garden is interesting, perhaps, for only six weeks of the year.

Recently I saw a rock garden that had been made by a prominent firm of rock gardeners. It was very pretty; and everything was in flower, or rather, nearly everything, for early Saxifrages and a few other things had already bloomed and passed. I wondered what this particular rock garden would look like towards the end of August and onwards. All the plants that were flowering would be over and, as there was nothing to replace them, this rock garden would be very dull later in the season.

Many imagine that a rock garden is of necessity a spring garden, but it is quite possible to lengthen the season when flowers are available by three months.

Some of the plants enumerated below are late-flowering, others commence to flower early, and continue to bloom throughout the summer and into the autumn.

One of the most useful families of late-flowering subjects is the Oenothera and undoubtedly one of the finest species is O. pumila. This plant provides the richest of yellow flowers in a season when alpines with yellow flowers are very few. The habit of the plant might be described as "sprawling," and its beautiful flowers are produced from July until August. Another desirable Oenothera is O. speciosa rosea. This plant grows erect, about eighteen inches high. It produces large flowers of an exquisite shade of white and pink from July till September.

O. missouriensis is a creeping plant and only four inches in height. It will soon cover a piece of ground where little else would grow. Like the others, it produces flowers in great freedom from July until September. The individual blossoms are four inches in diameter, and of a very bright yellow. This admirable plant is not common, probably because it is not often seen at shows, it being rather difficult to exhibit.

Zauschneria californica comes into flower in August, and continues blooming until October. Strange though it seems, this Californian plant is not popular, and yet it is very pretty. It grows freely in hot, dry situations and attains a height of one foot. The leaves are pretty and inclined to be hoary. The quaint, tubular flowers are brick-red and very numerously produced.

Origanum Tournefortii is a very charming and graceful little plant. The thin, wiry stems bear pale mauve flowers from late July till September. The blossoms are rather difficult to describe, but they remind me somewhat of Briza maxima (Quaker Grass).

There is no reason why some of the dwarfer Asters of the Amellus section should not be used on the rockery, for they make a splendid display of colour during the autumn. Useful varieties are: Framfieldii, cassubicus, Mrs. Perry and rubellus; all these varieties are two feet in height.

Aster Thomsonii is a fine plant producing a wealth of rich mauve flowers from August till October; the colour is most beautiful in the early morning.

Among late-flowering Gentians are G. Andrewsii, dark blue; G. Farreri, bright blue, with a white throat; and G. sino-ornata, that produces large, bright, blue trumpets from August till November.

There are countless other plants, perhaps not all strictly alpines, but, nevertheless, very suitable for the object we have in view; the following is a short list: Potentilla Tonguei, Dryas octopetala, Ceratostigma Willmottianum, Aethionema iberideum, Hypericum fragile, H. aegyptiacum, Linaria pallida, Lysimachia nummularia variegata, Meconopsis cambrica fl. pl., Mimulus cupreus vars., Sedum kamtschaticum, S. pulchellum, S. Ewersii, S. Sieboldii, Silene Schafta, Teucrium Chamaedrys, Thymus Chamaedrys, Tunica Saxifraga fl. pl., Verbena chamaedryfolia and V. venosa. *John Birkentall, Taplow.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM CURTISII.

This species of the large genus Cypripedium is indigenous to Sumatra and requires to be grown in a temperature ranging from 65° to 70°. The livid-coloured flowers develop during the late spring and summer. The dorsal sepal is green and purple veined, and the margin is white. The lip is comparatively large and dull, purplish-brown in colour. The petals are green veined, spotted with purple, and ciliate on the surface and around the margins.

The variety Sanderae is similar in form, but a dull yellow colour. Both have variegated leaves, and in common with all Cypripediums with this distinct feature, it is necessary to modify the compost, and include rather less loam fibre than is used for the green types.

When the plants are newly-potted, a moist atmosphere is required, and this should be maintained by syringing between the pots on frequent occasions. *J. Robbie.*

CYPRIPEDIUM SPECTABILE.

At a recent meeting of the Royal Horticultural Society, at Vincent Square, some of the visitors were charmed with the beauty of Cypripedium spectabile in several exhibits. But although the plants were worthy of admiration, the lover of hardy terrestrial Orchids should go to Kew to see Cypripedium spectabile at its best. By the side of the tiny rill in the Rock Garden at Kew there is a magnificent plant, over two feet high, full of vigour, and bearing unusually large flowers, the milk-white standards and rose-flushed lips being strikingly beautiful. Mr. Irving seems to have a very happy hand with the terrestrial Orchids for he is also exceptionally successful with the handsome Madeira Orchid.

Autumn is the best season to plant Cypripedium spectabile. Roots should be secured early and planted in a bed in a low-lying portion of the rockery or border. Remove the soil to a depth of one foot or a little more, and place a layer of broken bricks in the bottom of the hole to ensure good drainage; then fill the hole with a compost, consisting of rough peat, fibrous loam, decayed leaf-soil, sharp sand and charcoal, with the addition of a little chopped Spagnum-moss to assist in retaining moisture at the roots.

When planting, spread the roots out horizontally so that at the completion of the operation the crowns are two inches or three inches below the surface, and work the soil well in between the roots, pressing it firmly with the fingers. Care must be exercised not to injure the crowns. A piece of coarse mesh wire-netting placed above the ground where the plants are, and secured to stakes, will effectually prevent birds from scratching away the soil. *T. H.*

CYPRIPEDIUM HEDLEY.

This is a hybrid from C. Moonstone × C. Nirvana, and flowered recently in Mr. Cookson's collection. The dorsal sepal is pure white, excepting for a small area of green at the base, where there are some slight brown markings. The well-shaped petals are greenish-yellow shaded with a brown suffusion, and have white tips The lip is bright greenish-yellow, suffused with brown markings. *H. J. C.*

INDOOR PLANTS.

CYCLAMEN LATIFOLIUM.

Though it is generally accepted that the Cyclamen is one of the best greenhouse plants for winter and spring flowering, it is surprising what a large number of gardeners neglect to cultivate it. Whatever may be the cause, it certainly is not because the Cyclamen is difficult to cultivate, for with the aid of a greenhouse and a cold frame or two, Cyclamens may be grown as easily as most greenhouse plants, providing the treatment is suitable.

From a sowing made in January it is possible to obtain good flowering plants within the year, but however good these plants may be, I doubt if they are ever so strong as those raised from seeds sown during late summer and autumn, for the extra growth made in those few months makes all the difference.

Two sowings should be made, one in early August and one in mid-September, and the plants of these two sowings should be treated as two distinct batches all through, the result being a valuable lengthening of the flowering period.

The soil for sowing should contain at least one third of its bulk of leaf-mould, the rest fibrous loam which has been passed through a half-inch sieve, mixed with a liberal amount of coarse sand, for it is necessary to have soil that is porous. Pans are better than wooden boxes for raising the seeds in, but whichever is used, the drainage should be ample.

When filling the pans, make the soil only moderately firm, and place the seeds, one by one, about half-an-inch apart, covering them with about an eighth-of-an-inch, or even a quarter-of-an-inch of fine soil. If the compost is moist before the seeds are sown, water will not be needed for a week or so, as a sheet of paper placed over each box or pan will prevent it drying out, but great care must be taken to make sure that the soil does not become dry, as if this happens after the seeds have started to germinate it will be fatal to success. The seeds should be germinated in a temperature of about 60°, and a moist atmosphere is essential.

Prick off the seedlings so soon as they can be handled, though it is wise to retain the seed-pan for some time, as germination of Cyclamen seeds is somewhat spasmodiic, and the grower who is hasty may lose some of the best plants. The soil in which the seedlings are transplanted should contain less leaf-mould than the previous mixture, and should be pressed a little firmer. After the roots have taken to the soil, encourage the plants to grow strongly, by admitting fresh air on all possible occasions. The winter temperature should range around 50°, though if it falls to 45° no real harm will ensue.

In early spring the plants will be well rooted in sixty-sized pots if growth has been generous, and this is the dangerous stage, for insect pests will appear with the first hot days, including aphis, red spider and thrips; therefore it is well to be prepared. A weekly syringing with a weak insecticide is usually effective in combating these pests, though it is well to bear in mind that healthy plants resist disease to a remarkable degree. A frame is a suitable place for these young plants once danger of severe weather is over, and if closed early and the plants well syringed, there should be no danger after about mid-April.

In May or early June the plants should be potted for the final time; forty-eight-sized or four-and-a-half inch pots are quite large enough for all ordinary purposes. The soil should be rich; a suitable compost may be prepared as follows:—Three parts yellow, fibrous loam one part leaf-mould, one part rotted manure, with sharp sand or brick rubble added to ensure the texture being open. Add a little crushed charcoal, and if the soil is not naturally rich mix a little quick-acting fertiliser with it.

In potting, do not make the soil too hard, and, most important, do not bury the corm more than half its depth. From now onwards a cool, shady frame is the best place in which to grow the plants, and admit air freely, though always try to preserve a genial atmosphere. If the pots are plunged in ashes or fibre, the plants usually do well, but watering must be done with the greatest care, for though the Cyclamen needs plenty of moisture, an excess is harmful.

August should see the plants strong and growing fast, and by September they should be placed in a glasshouse. Pick out those that promise to flower early, and encourage them to develop by feeding the roots with liquid manure, also maintain a moist atmosphere. In the period of short days when light is so valuable, it will be a great advantage to stand the plants on shelves near the roof-glass to obtain early-flowering batches.

There is now such a variety of colours in this plant that one hesitates to recommend any special variety, but I consider the best red is Firefly and St. George the best salmon, with White Swan the best of the whites. The varieties with silver leaf markings are delightful and in these there is now quite a wide range of colourings. Fringed varieties are to be had in most colours, and the best of this type is Fringed Pink Pearl.

Good, generous culture and keen watchfulness on the part of the cultivator are needed to grow Cyclamens successfully; when the cultivation is perfect the plants will respond as few other winter-flowering subjects do. *J. S. D.*

TREES AND SHRUBS.

CLEMATIS ARMANDII.

THE plant of Clematis Armandii illustrated in Fig. 5 has grown from a seedling raised in Sir Thomas Hanbury's garden at La Mortola from Chinese seed. Lady Thiselton-Dyer planted it by the side of the Loquat, which flourishes on the south-west side of our house; this has given it fostering protection in its youth, and the necessary support in its maturity.

Our plant is thought to be a better strain than usual. We supplied cuttings to Sir Edmund Loder more than once for Leonardslee, but they failed to strike. Mr. Hiatt Baker tells me that he has been more fortunate at Almondsbury. *W. T. Thiselton-Dyer, The Ferns, Witcombe, Gloucester.*

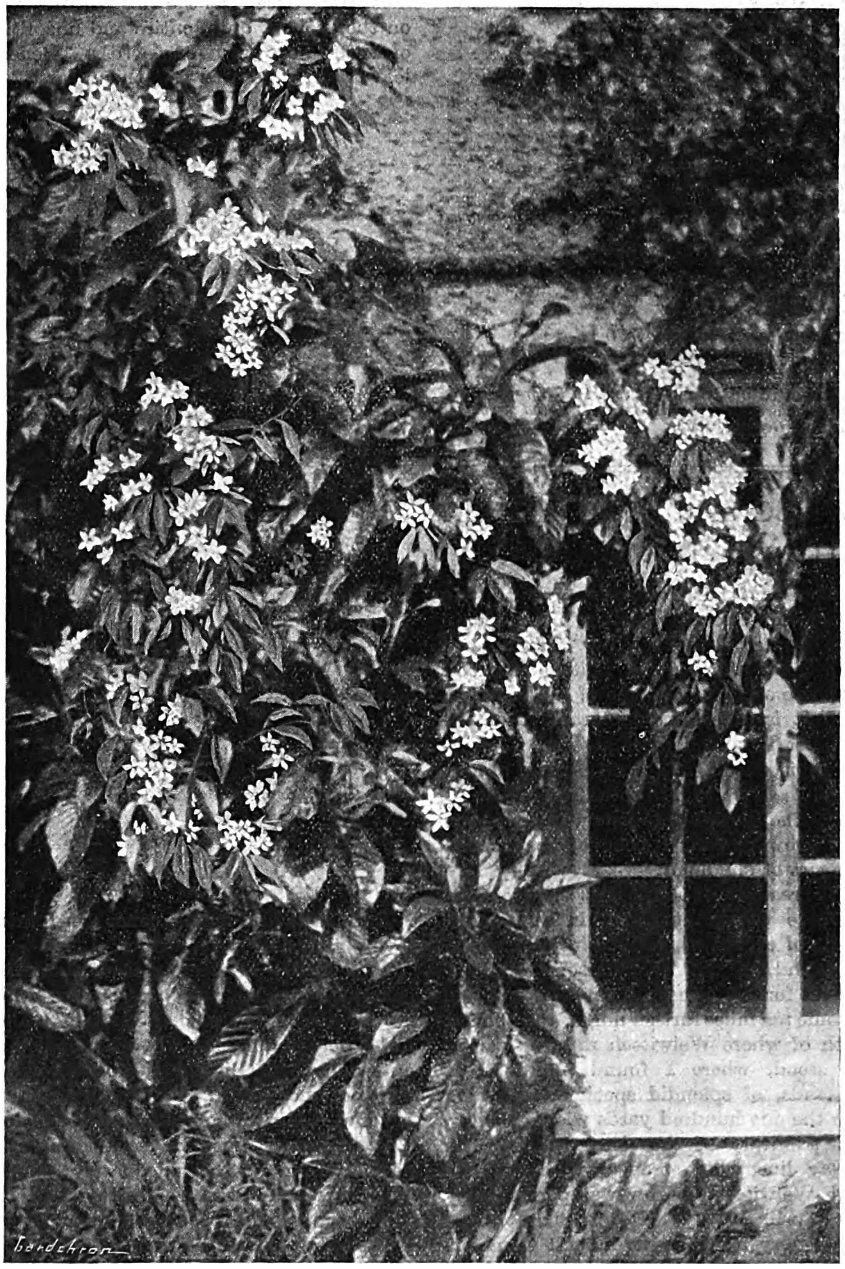


FIG. 5.—CLEMATIS ARMANDII IN ASSOCIATION WITH ERIOBOTRYA JAPONICA.

MAGNOLIA GLAUCA.

THIS is not a showy Magnolia. It does not, like M. conspicua, M. Soulangeana, M. Lennei and others of the popular earlier flowering Magnolias, flaunt its blooms to the skies. One has, almost, to search the slender trees for their flowers, but how delicious is their fragrance, somewhat suggestive of the later-flowering M. grandiflora, but without its pungency. So far, as I have seen, in various parts of the country, the Swamp Bay, as the Americans so term Magnolia glauca, does not produce many flowers at a time, but its blooming continues from early June until well into the autumn, and during this considerable period one can nearly always find at least a few blooms open. The globular flowers, which are not so large as those of M. conspicua, are creamy-white when first open, but they are often lightly tinted with green on the outsides. In the eastern United States this species is said to grow occasionally to a height of fifty feet, but in this country a tree of twenty feet would be considered quite a fair specimen. *A. C. B.*

GENISTA CINEREA.

AT the time of writing, June 18, this plant is the glory of the garden, great masses of it, fifteen feet to twenty feet in height, being covered with its golden yellow flowers. It is surprising that this species is not more generally planted, as it may be used either for furnishing a large lawn bed or for planting in the wilder part of the garden. *J.*

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WELWITSCHIAS AND OTHER PLANTS OF DAMARALAND.

In view of the fact that Damaraland, South-west Africa, is now a territory under the mandate of this country, it seems a pity that greater facilities are not afforded for British botanists to travel there and collect some of its botanical treasures. It is especially deplorable that the plant of chief botanical interest, viz., Welwitschia mirabilis, Hook. f., should remain almost unknown in the flesh to our botanists and horticulturists. The British botanists who have seen this plant growing can, I believe, be counted on the fingers of one hand.

One of the reasons for this is that the two main regions where the plants grow in abundance are difficult of access, viz., Haikamchab, where my late friend, H. H. W. Pearson, obtained the material for his classic researches, and the district, some ten miles further north, and about a mile south of where Welwitsch railway station formerly stood, where I found hundreds, if not thousands, of splendid specimens growing mainly in the one hundred yards wide, dried up bed of a tributary of the river Swakop. As the railway line which traversed the district where the Welwitschias grow was permanently closed in April, 1910, a visit to these plants is rendered very much more difficult than formerly. In view of their comparative inaccessibility, and the large numbers in which they occur, there is really small need at present for the official preservation and protection which is afforded them. Although Pearson was at Welwitsch, he was only aware of the dozen or so rather poor specimens growing close to the station. It was apparently these plants also which the American, W. A. Cannon,* noted, as he speaks of seeing only five specimens, and his photos are of plants with much-split leaves, and hardly any stem showing above ground.

From April 4 to 15, 1910, I stayed at Welwitsch station, some forty miles east from the coast, and almost daily wandered amongst and closely observed, hundreds of beautiful and, in many cases, very old specimens of Welwitschias growing in the river bed and on the low granite kopjes. The stems of several plants stood over a foot high. The crowns of many were enormous; one or two I measured were twelve feet in circumference. Lying full length on one of these crowns, my head and feet were easily included within it, giving it a measurement, therefore, of six feet across! The two leaves, of a beautiful grass-green, were, for the most part, except at the tips where they trailed on the ground, quite entire and unsplit. Some of them were two feet across. Beneath the leaves the sand was slightly moist.

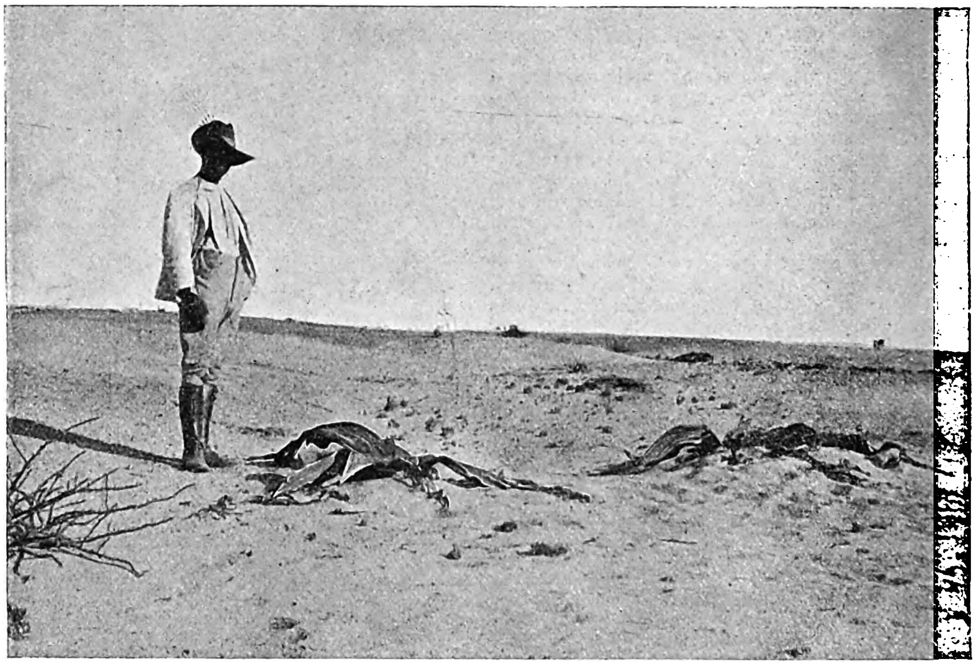

FIG. 6.—WELWITSCHIAS GROWING WILD IN DAMARALAND.

Both male and female cones were tinted with lovely pink and green shades.

Two kinds of Hemipterous insects, gaily coloured, were always busy on the cones, and appear to be the chief agents in pollenation. I also observed green and yellow-bodied spiders, ants, and a bee. Bi- and trifurcated female cones were not uncommon. The seeds contained embryos at a fairly advanced stage of development.

Welwitschia must be seen growing in its native home to be adequately appreciated. With removal and transportation its leaves lose their colour and become split into ribbons. I was only able to bring home three quite small specimens.

It was delightful walking on the firm, finely-gravelled surface of the Namib plateau. Close to the Welwitschia groves rose dark, sombre rugged hills of dolorite and hornblende, while granite cropped out here and there; and we found beds of mica, asbestos, beryl and quartz, while in places were surface deposits of saltpetre.

Mirages were an almost constant feature of the distant view. Apart from Welwitschia, the most striking plant in that region was Commiphora oblanceolata, Schinz, bearing little tufts of leaves at the tips of short twigs which taper suddenly to a point from very stout swollen bases. Another very remarkable plant was a species of Sarcocaulon (near S. mossamedense), the stems of which are covered with a waxy coating of extraordinary thickness. On rocky hillocks grew the weird Portulacaceous plant, Anacampseros papyracea, the striking Crassula pyramidalis, and the Asclepiad Hoodia, not to mention various Euphorbias and Mesembryanthemums. At one spot a veritable plant-hedgehog in the form of Codon Royenii Thurib (Hydrophyllaceae) was met with. Surely one has never seen anything more spinous! In the rocky ravines grew Bauhinia Marlothii, Engl., with its lovely yellow flowers. I also gathered Sutera atropurpurea (Scrophulariaceae), Heliotropium strigosum, Willd., Salvadora persica, Linn., Aerva desertorum (Amaranthaceae), and Parkinsonia africana, Sond., the Leguminous plant the seeds of which provide excellent coffee for the natives. A small water Melon, Citrullus sp., trailed on the sand in the river beds. The presence of Indigofera arenaria, Rich., was interesting, as its only other known habitat is in East Africa.

Of trees, almost the only ones seen were Acacia Giraffae and A. albida.

Very little trace of animal life (apart from insects) was met with. The footprints of a gemsbok, a chameleon which we encountered on the trolley track, a hare darting from beneath a huge Welwitschia leaf, and an occasional mouse, were all I saw.

In view of the extreme aridity of the region, the variety of insect life was amazing. Nowhere in South Africa have I found the common house-fly so great a pest as in Damaraland; it is the bane of all out-door activities. One morning, running up the line on a trolley, I was struck violently on the eye by a large green locust. In the evenings, while sitting reading in the booking office which was at once parlour, bedroom and larder, the bright lamp-light induced a great invasion of the insect tribe. Small parties of very large ants came trooping in, and these I promptly killed. But the large moths, flies of various kinds, flying cockroaches, dragon-flies, grass-hoppers, and large heavy beetles resembling dumble-dors, which banged down on the table close to the lamp—all these I paid little attention to. Nor were mosquitos troublesome at night, very few of them being in evidence. It was certainly astonishing to see dragon-flies, as the only water for miles around was that contained in the station tank. Of butterflies I saw Whites and Painted Ladies.

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* W. A. Cannon, *General and Physiological Features of the Vegetation of the more arid portions of South Africa, &c.*, Carneg. Inst., Washington, August, 1924.

A violent, hot, east wind, blowing clouds of dust, kept me indoors for two whole days.

I finally left by train for the coast, sitting in the blazing sun, close to the smoky engine, in an open truck amongst a party of Hottentots, using their luggage as the only available seating accommodation!

On all the dry rocks at Khan, the next station to Welwitsch, are great quantities of the exquisite little "Everlasting" or "Edelweiss," as it is locally named, Helichrysum roseo-niveum, Marl. and Hoffm.; it is a gem of a plant and completely covered with a loose, cottonwool-like tomentum.

On the seashore at Swakopmund grew large bushes of Zygophyllum Stapfii, with its large, orbicular leaflets of fleshy texture. This reminds me that I collected another species with prostrate stems at Welwitsch, which still lies unnamed in the Kew Herbarium.

On the sand-dunes at the mouth of the river Swakop were many beautiful Tamarisk bushes, the species being either Tamarix usneoides, E. Mey, or T. articulata, Vahl.

A visit was paid to Walfisch Bay in order to see growing on the sand-mounds at the Hottentot village nearby, the interesting Cucurbitacea, Acanthosicyos horrida. At that time (April) the fruit was still unripe; material of this and the vegetative parts was collected. The American botanist, W. A. Cannon, appears to have found this plant much nearer Swakopmund.
W. C. Worsdell.

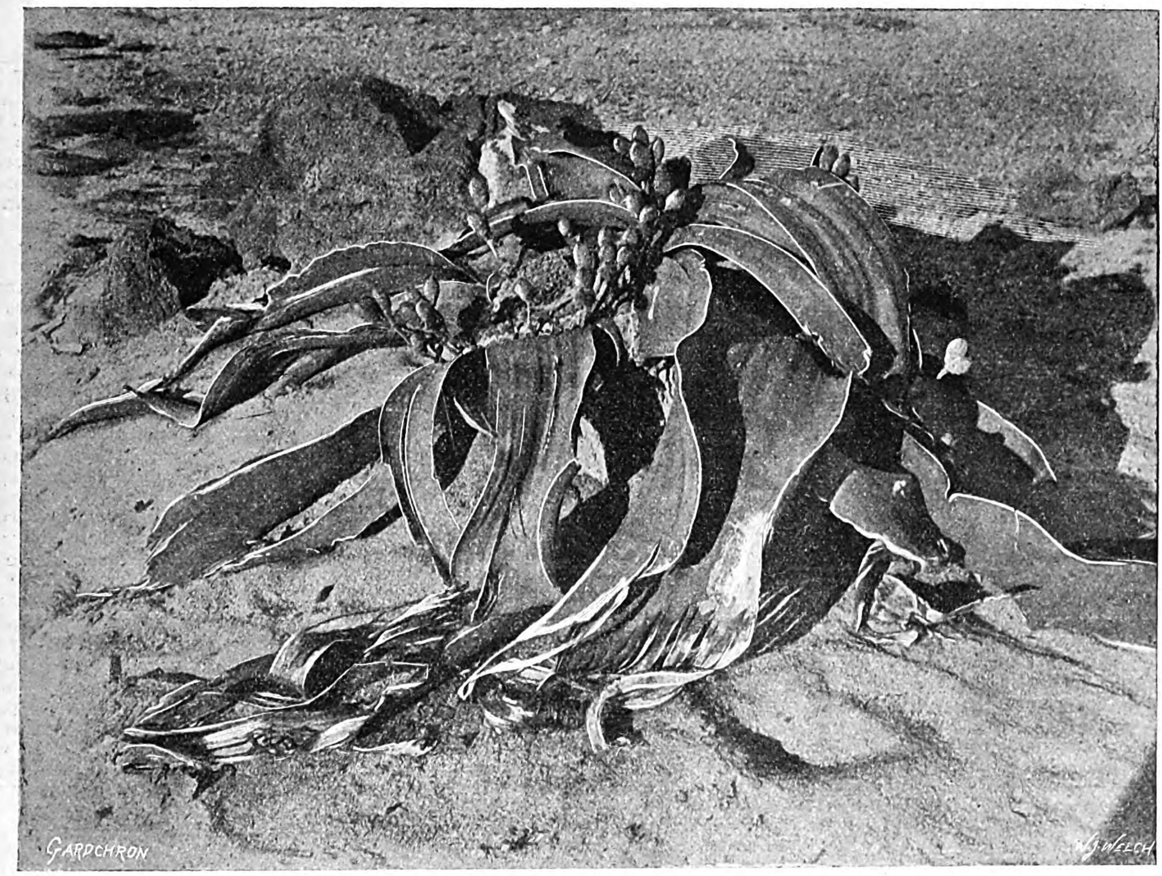

FIG. 7.—A FEMALE PLANT OF WELWITSCHIA MIRABILIS BEARING CONES.

WITH A NOTE-BOOK IN THE ESTEREL.

IN striking distinction to the often grey and barren limestone ranges which predominate along the Riviera, the Esterel group rises in rugged heights of igneous rock, consisting in the main of red porphyry. The hot, brick-red of this volcanic formation, often curiously interlaid with green porphyry, is never likely to be forgotten by anyone who has ever seen it in bold contrast with the sapphire of the sea or when making, as it often does, so pleasing a setting for the rich green of the Maritime Pine (Pinus Pinaster) or the softer moss-green of the Stone Pine (P. Pinea).

One bright morning in mid-April, I left Agay for the gorge of Mal Infermet, which lies in the heart of this great oasis of red and green, and a more delightful walk I had not had in a three month's tour of Southern Europe. The first part of the route lay through pleasant meadows where the young hay, fragrant with homely Red Clover, was flushed with a subtle shade of bluish pink, the coalescing of the blue of Linum angustifolium with the fresh carmine-rose of Ragged Robin. Among the unfurling Bracken at the foot of the slopes I noted the pure white spikes of Cephalanthera ensifolia, and in drier places, where Cistus monspeliensis, C. salvifolius and C. albidus were all just approaching their fullest beauty, there were colonies of other members of the Orchidaceae, Serapias cordigera and S. neglecta.

At the foot of a northerly slope, cool with Ferns and Mosses, the shallow soil over wet rocks was sheeted with the lovely Saxifrage granulata, and along with this, ranging among the fragrant bushes of Myrtus communis, Lavandula Stoechas and Lentiscus (Pistacia Lentiscus) were quantities of the lovely Anemone stellata in an attractive shade of pink with a bluish reverse. In addition to the Cistuses which here cover mile after mile of the hillsides, their ranks were broken not only by the steel-grey foliage and purple bracts of the Lavender mentioned (these bracts were often over one inch long by half-an-inch broad), but by golden billow of Cytisus triflorus, and by masses of Calycotome spinosa, the latter, varying from pale yellow to forms in peculiarly rich tones of orange. Some of these latter I should like to have brought home, but C. spinosa has so far not been a success in my Welsh garden.

Erica arborea was much in evidence among the shrubs. I saw some good forms of Viburnum Tinus, which also I coveted and Arbutus Unedo was in flower and fruit. Spartium junceum, not so frequent here as in some limy regions, was not yet in bloom, but the local May tree, Crataegus monogyna, was padded with white. Also in the undergrowth of the Pine woods and along the wooded banks of the stream, which in places had been almost usurped by Acacia dealbata, I saw the snow-white Amelanchier vulgaris, and the rosy flush of a wild Apple, probably Pyrus acerba.

In part shade and along the roadside thickets, the curious brown "tongues" of Aristolochia rotunda were frequently seen. The lovely blue of Anchusa italica here seemed to take the place of Borago officinalis, so common elsewhere. Allium triquetrum followed the stream, whilst in drier places the beautiful, but more strongly flavoured, A. roseum was opening its first flowers. Scarlet Poppies and Corn Marigolds made a gay mosaic over the little clearings as the last of these was left behind, and along the borders of these cultivated places Echinum creticum was very conspicuous in bold patches of fiery red. Nor did that very attractive Thistle, Galactites tomentosa, with large, bright, rosy-lilac flowers, escape admiration. The spiny foliage of this handsome plant is often strikingly veined with ivory-white, while the underparts of the leaves are felted with the same colour. Orchis provincialis was also growing here.

As the road ascended the mountain side, the poor, stony soil often bared to the full beat of an unsparing sun, did not promise very much in the way of plant life. But Helianthemum Tuberaria, not yet flowering, proved to be abundant, and I soon came upon quantities of H. guttatum. This delightful little annual varies considerably in stature, and its bright yellow petals do not always have the chocolate blotch at the base which gives them so close a resemblance to the blooms of H. formosum in miniature. On these dry slopes were quantities of Asphodelus cerasiferus, very stately and rising to nearly three feet, a more refined plant than the still taller, more branching A. microcarpus, which was common nearer the sea. The dainty St. Bruno's Lily (Anthericum Liliago) was also here, and shortly after seeing these, I came upon large areas of Iris Chamaeiris, which has large, rich purple flowers borne on stalks six inches long and very sweetly scented. Not less striking than any of these were the Milkworts (Polygala nicaeënsis) of which there would appear to be several forms. These, growing to about a foot in height, made masses of colour in singularly deep shades of violet-purple, crimson and mauve. Especially brilliant was the effect when they were growing in conjunction with the golden masses of dwarf Broom (Genista pilosa), which abounded.

In the gorge, the foot of which is occupied by a bright and rocky trout stream and an excellent walking road which leads over to La Trayas, the scene was romantic and wild without being austere. The great cliffs and pinnacles of red rock which rose well above the tree tops were often stained with sulphur-yellow, plum-purple and blue-grey. Now and then a tiny Pine, looking centuries old, was seen clinging to a crack in their red-hot ribs, but beyond this they were utterly devoid of vegetation and recalled by their strange tints and pinnacled or columned form many a scene on a larger scale once seen on the Columbia river of North America.

Into the trough of the valley, around the feet of these towering mountains, the April sun streamed through leafing Alders and Hazels, and flushed with a brighter hue the purple blossoms of the alien Judas trees. These latter were often crowded so thickly along the waterside that the air beneath them was filled with a rosy radiance. Even so, numerous as they were, there was abundant evidence to show that before the gorge was burned out by one of these destructive fires which at this place or that, are ever reducing the forests of the Esterel to ashes, there were many more Judas trees than there are to-day.

Some of the deep and narrow clefts which fed the main ravine were filled with Osmundas, their old, brown fronds attaining to some four to five feet above the unfurling croziers of the new. A Linaria (probably L. simplex) was sharing a loose slide of rubble with Antirrhinum latifolium, whilst in similar spots were the spiny grey-green and yellow cushions of Euphorbia spinosa, which is always such a delight on the red cliffs of the sea. In the undergrowth hereabouts it was interesting to come upon the common Privet, and with it was the evergreen Buckthorn (Rhamnus Alaternus) clustered with greenish-yellow flowers. Phillyrea angustifolia was also noted in bloom, and the crimson berries of Smilax aspera were everywhere conspicuous.

Thymus vulgaris, in clumps about one foot high, was abundant, its delicate, rose-pink giving drifts of colour to the most barren of rocky slopes. On my return journey, I came upon a few plants in bloom of Narcissus poeticus which could hardly have been expected in a spot so remote from habitation. N. Tazetta was growing in plenty in the lower meadows, and here, as they were going off, the splendid rich purple Orchis laxiflora was just beginning to flower. I also find a reference in my notes to Genista hispanica, very dwarfed and prostrate, growing along with Calluna vulgaris. Orobanche cruenta was discovered in various places, the dwarf Broom mentioned usually being the victim of its red and yellow clubs. Another parasitic plant noted when looking for Cistus ladaniferus (which could not be found) was Cytinus Hypocistis. This is generally found on Cistis monspeliensis, and appears in April, pushing out of the ground in a squat rosette, but it is very conspicuous with its scarlet bracts and vivid lemon-yellow, tubular flowers huddled together at its centre. This curious parasite is said to be the only non-tropical representative of of the Rafflesia family, Cytinaceae. *A. T. Johnson.*

HANDICAPPING THE NURSERYMAN.

LARGE numbers of young trees are being planted, not only by private individuals, but in the great afforestation schemes that are being carried out by the Government in various parts of the country. In pre-war days the majority of such trees was raised in nurseries, but of late years the trade has largely passed into the hands of the Forestry Commission or Continental nursery firms, who are supplying the trees at so cheap a rate that our time-honoured industry is threatened with extinction.

Many home nurseries have been established by the Forestry Commission, at which nearly all the young trees that are required for the present Government scheme of replanting are raised from home-saved or foreign seeds, and well-grown, clean, healthy trees are being obtained. There is no doubt, however, that the production of such vast quantities of forest trees is having a bad effect on the business of legitimate nursery firms. This is all the more serious when it is remembered that during the war many nurseries had to close down owing to there being no demand for their stocks, and these drawbacks, combined with German and other outside competition, have almost ruined one of the oldest and most useful of our national industries. Little wonder, therefore, that nurserymen in several parts of the country are up in arms against the policy of the Forestry Department, and certain private owners of estates, in rearing their own stocks of trees for afforestation purposes.

There are complaints from many districts; one nurseryman in a fair way of business in Southern England declares that his trade has suffered, severely, not only from competition by private nurseries, but owing to the importation of large numbers of seedling trees from Continental sources. It is, perhaps, invidious to mention names, but a well-known nurseryman who had raised large stocks of seedling trees in anticipation that an extensive scheme of afforestation, near by, would relieve him of considerable numbers of these, found out his mistake, when a staff of workmen arrived to trench and plant a tract of land for the rearing of young trees on the site of the proposed plantation. An almost parallel case was reported from Wales. But these are only isolated examples that by chance were brought to notice, for that others of an almost similar kind have occurred in other parts of the country may be inferred from letters that have appeared in the public press.

One nurseryman of many years' standing, states that he considers competition should not take place between public and private individuals or State Forestry Departments, in the matter of raising forest trees, as not only has the legitimate cultivator of these to pay high rent, rates, and taxes, on his land, but he constantly employs a staff of competent workmen who raise the trees that are required for the formation of woods and plantations. It is further contended that seeds of forest trees can be procured by the Department at a much cheaper rate—sometimes free of all cost—than is the case with the nurseryman.

In the North of Scotland high prices are at present being paid by nurserymen for the collecting of cones of the native Pine, Larch, and other trees, from which young stock is to be raised. Nurserymen contend, and rightly, too, that the raising of many millions of young trees by a Government Department for afforesting purposes is a decided set-back to the production of these by nursery firms, and that by so doing a long established industry of this country will, in the long run, be partially eliminated. When in Scotland lately, I had an opportunity of visiting some of these extensive tree nurseries that have been established by the Forestry Commission, where millions of trees, chiefly Coniferous, are cultivated, including principally the common and Japanese Larch, Scotch and Corsican Pine, common and Silver Spruce, and Douglas Fir. With cheaper labour at their command, and seeds, either free or at a low rate, the Commission can raise young trees at a comparatively lower rate than the majority of our public nurseries.

It has been argued that young trees raised on land of a similar kind and at equal altitude to that on which they are to be planted permanently, have better chances of succeeding than others that are transferred from a distance, and require to be conveyed thither by road or rail, often for many miles, which necessitates their being packed in bundles, when the roots must suffer in consequence. That there is a great amount of truth in this statement no one of experience in tree planting will deny, though that there are many public nurseries situated at considerable elevations, where young stock is raised that is of sufficiently hardy nature to withstand the climate of the highest altitudes at which tree planting takes place in this country, must also be admitted. Such are to be found in Northern England, many parts of Scotland, mountainous districts of Wales, and in parts of Ireland, where young trees are raised under conditions that fit them for withstanding the cold and wind-swept hillsides where they are intended for afforesting purposes.

Nor has it been disproved that stocks of trees raised at a moderate elevation where the plants grow strong and robust, are not quite equal to others that have been reared on higher and more exposed land, and in consequence are sometimes starved and wanting in the stamina of the more favourably cultivated trees.

The question of expense has also been advanced in favour of trees raised in public nurseries, the head of a well-known firm stating that, in comparison with others raised in private grounds, those supplied by bona-fide growers can be produced at nearly one-third cheaper rate. He also contends that in the case of private nurseries the cost of producing young trees includes rent of land and taxes, while unemployed labour is often made use of for certain classes of work. When the conditions of land tenure and working expenses are taken into account, this is only what might be expected.

Another fact is that forest trees can be raised more cheaply and efficiently by experienced workmen than by casuals, however well they may be looked after. I have had to do with several large, well-wooded estates, on each of which a home nursery was worked, but in every case the bulk of the plants raised were more of the kind for under planting and shrubbery work than for general forest planting. The fact, however, remains that vast quantities of Coniferous tree seeds that are yearly being sent to this country from Canada and elsewhere, and from which millions of young stock is raised, must act prejudicially in the interests of the legitimate nurseryman.

As giving some idea of the immense quantities in which seeds are being sent, the Crown Timber Agent at New Westminster, informs us that in reply to an urgent cable message from Great Britain, 1,500 lbs. of Sitka Spruce seeds were forwarded a year ago, to the British Forestry Commission for planting in North Britain. In addition to these seeds, ten sacks of Lodgepole Pine seeds were sent from Northern British Columbia, while a shipment of twenty-five sacks of Douglas Fir cones was collected in the William Lake district, and 250 sacks on Queen Charlotte's Island by Provincial foresters. *A. D. Webster.*

RARE GARDEN WORMS.

II.—THE VENETIAN WORM.

WHILE working on the annelids of Ireland, I had the good fortune to discover, in June, 1892, a new garden worm. This was described as Allolobophora hibernica. It is rosy- or flesh-coloured in front, with a dull yellow girdle, greyish posterior, and tail resembling that of the Gilt-tail. On sending the description to Dr. Rosa, of Turin, I learned from him that he had already described a similar worm from Venice, but that the Hibernian form differed from his type in many particulars, and if not specifically different, was at least so well marked a variety as to merit the name I had given it. Rosa's worm, therefore, as being the first to be described, retains priority, and to his Eisenia veneta (Figs. 8, 9) mine stands as var. hibernica. But it was found, as the years went by, and our knowledge of garden worms extended, that the Venetian worm was the most unstable and variable creature to be found in our annelid fauna. Recent discoveries have extended our knowledge, and it is the object of this paper to give some account of the polymorphic animal, and the many varieties to be found in our English gardens.

The typical Venice worm is closely related to our common Brandling (Eisenia foetida, Sav.), and some of its forms are so closely similar that they might be, and are at times, confused the one with the other. Even in the types from which Rosa deduced his definition, there was much variation in the shape of the head, the extent of the girdle, the length, number of segments and other details. In general, the worm is flesh-coloured with darker bands. The setae are wide apart, *i.e.*, in eight rows instead of four pairs, as is more usual in earthworms; the male pores on the fifteenth segment are sometimes on conspicuous papillae, while at other times they are hardly to be seen. The girdle may begin anywhere between the twenty-fourth and twenty-seventh segment, and ends on the thirty-second or thirty-third. On two of these, viz., thirty and thirty-one, are swellings, known to the student as tubercula pubertatis; the length is from two to three-and-a-half inches (fifty to eighty millimetres), the diameter is five millimetres and upwards, which is unusual for so short a worm, and there are from 120 to 155 segments.

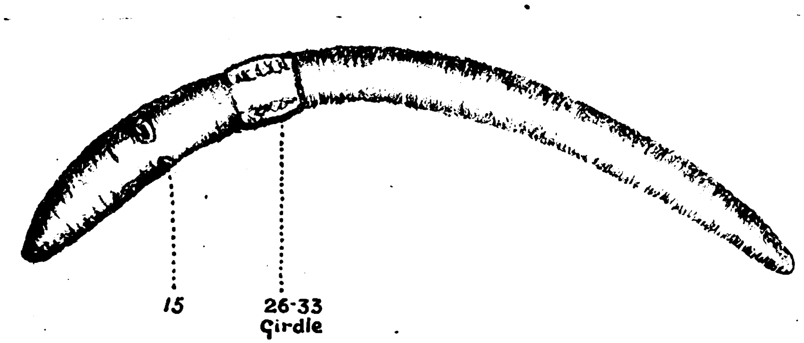

FIG. 8.—LATERO-VENTRAL ASPECT OF EISENIA VENETA, ROSA: 15, MALE PORES; 26–33, GIRDLE. × 2.

In September, 1909, I found specimens of this worm at Kew, and concluded that it had been introduced from abroad. This idea is confirmed by the fact that until recently no single specimen of the type seems to have been found in any garden in this country. In September, 1926, however, I had the good fortune to find among garden refuse at Colwyn Bay, a solitary worm which answers almost exactly to this description. Such departures from the type as may be found are quite in harmony with its known variability, and only tend to keep up its character for instability. At the same time, I found two varieties of the species in North Wales, and this makes the subject one of the greatest interest. Another variety, found by Dr. Michaelsen some years ago, was named zebra, and this has been found by Southern in Ireland, though not in England. The tubercula extend over segments twenty-nine to thirty-two, the length is 120 mm., the segments number 150, and the diameter is 8 mm. This is the largest form known.

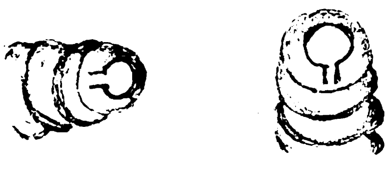

FIG. 9.—HEAD OF EISENIA VENETA. (ENLARGED).

Of so great interest is this worm and its many varieties that Southern* some years ago prepared a chart showing the distribution of the type, together with the three forms hortensis, hibernica, and zebra. It is known to occur from the west coast of Ireland through Wales and England to Germany, Switzerland, Italy, Dalmatia, the Crimea and Transcaucasia, then back by Crete to Portugal and Madeira, whence I received it some years ago through Dr. Turnbull, of Ireland. It has also been found in California, Santiago, the Argentine and Port Elizabeth, to mention some of the best-known localities. It is endowed with the grace of adaptation, and thus is able to succeed where other species fail. The number of worms which exhibit this characteristic is very limited, but we have some half-dozen or more which have become cosmopolites.

In 1904, I added another distinct variety to our list. In stiff soil, at the roots of plants in the Lily house of the Oxford Botanical Gardens I found in March of that year a long and slender form closely resembling a young brandling with the girdle limited to four segments, twenty-nine to thirty-two, and the tubercula, as usual, on the thirtieth and thirty-first. This was named, from its occurrence indoors, var. tepidaria. Five years later, I found two very distinct varieties in gardens at Malvern. One of these, named robusta, on account of its sturdy appearance, is widely distributed, and seems to be the British type. I have found it at Kew and Oxford, as well as Malvern, and now have to record a similar form from North Wales. Differing considerably from this is the variety which I have named dendroidea, on account of its resemblances to some of the tree-worms (Dendrobaenas). The male pores on segment fifteen are not very conspicuous, usually—though here again variation occurs—the girdle extends from segment twenty-nine to thirty-five, and the tubercula are sometimes on thirty, thirty-one and thirty-two, thus recalling another species of the same genus (Eisenia alpina), which has once been found in Scotland, but is as yet unknown in our English gardens. It should, however, flourish in such conditions as are provided by the rock gardens at Llandudno.

This last variety (if it be not a distinct species) is very active, forming a ring when touched, and then, by a great muscular effort, flinging itself away. I have observed a similar habit in another worm and have endeavoured to depict the action in my little book on *British Earthworms*. Another peculiarity must be noticed. In the case of robusta and one or two other varieties, which are pale and wanting in permanent pigment bands, the worms, when placed in alcohol, stretch out straight. But in that of dendroidea and typica the worm bends into a crescent. Here we have a subject of very great interest for the physiologist and the student of life-habits. There is a decided difference in the musculature of the different forms, and this must be related, among other things, to the conditions of life in which they are placed.

Thus far, then, our Venetian worm has been found to exhibit at least six different forms or variations, and to these may be added a Continental form (hortensis) which may or may not be included among those already named. But now, I think it necessary to add yet another, and a new name, tumida, to our list. At Bettws-y-coed I found five specimens of the Venice worm under the bark of an old fallen tree in the company of several Dendrobaenas, and these, I think, belong to one of the varieties already named. But in a rock garden at Ty'n-y-Maes, Colwyn Bay, I found half-a-dozen specimens, which, while they closely resemble var. robusta, are clearly differentiated from it by one peculiarity. It is well-known that the rule among native earthworms is that the girdle should be most fully developed dorsally. Sometimes it forms a simple saddle, at other times it extends to a greater or lesser distance down the sides, but it is a very rare thing for the girdle to be conspicuous ventrally. In the new variety, tumida, however, the girdle cannot be seen on the dorsal surface. The appearance is as if this saddle had slipped from its place, and was held in position, topsy-turvy, on the underside of the worm. This is a decided novelty. On the upper surface, in specimens preserved in alcohol, there is a depression where the girdle ought to be, and a corresponding tumidity or swelling underneath. This variety may be thus described :—

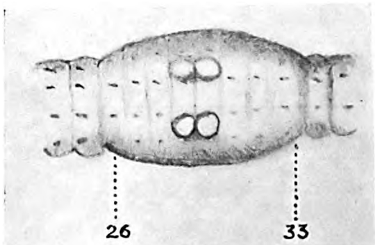

FIG. 10.—GIRDLE OF EISENIA VENETA VAR. TYPICA. 26–33, GIRDLE; TUBERCULA ON 29–30. (ENLARGED).

A small worm, an inch in length, flesh-coloured in front and grey behind, with the girdle undeveloped dorsally and tumid ventrally. Male pores on segment fifteen inconspicuous, setae widely apart; the worms stretching out straight when preserved, and not forming a curve or crescent. Segments covered by the girdle twenty-six to thirty-two with some variation, the tubercula on the usual segments thirty and thirty-one.

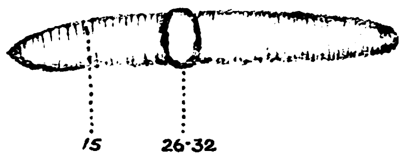

FIG. 11.—VENTRAL ASPECT OF EISENIA VENETA VAR. TUMIDA: 15, MALE PORES; 26–32, GIRDLE. × 2.

It thus appears that we have at least seven different forms of this worm in Great Britain, the principal haunts being rich garden soil and garden rubbish heaps. The list, with localities, may be of interest for future reference, as I hope we may yet add other forms when gardeners and naturalists awake to the interest and importance of the study and send me collections of rare forms from old gardens up and down the country for identification and comparison.

Varieties of the Venetian Worm.

Eisenia veneta, Rosa (Figs. 8, 9).

1. Var. typica (Fig. 10). Reported from Armenia, Palestine, Sevastopol, Trieste, Vienna,

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*Contributions towards a Monograph of Oligochaeta, *Proc. Roy. Ir. Acad.* 1909, p. 123.

Venice; and in England from Kew Gardens, September 1909 and Colwyn Bay, September, 1926.

2. Var. zebra, Mich. Ireland.

3. Var. hibernica, Friend. Dublin, 1892. Perhaps the same as var. decolor, Rosa, or Allolobophora cantibrica, Rosa.

4. Var. tepidaria, Friend. Oxford, March, 1904.

5. Var. dendroidea, Friend. Malvern, 1909.

6. Var. robusta, Friend. Malvern, Kew and Oxford. First described in 1909.

7. Var. tumida, Friend (Fig. 11). Found at Colwyn Bay, September 1, 1926.

Hilderic Friend, Cathay, Solihull.

SEASONAL PESTS AND THEIR CONTROL.

Mealy Bug.

Perhaps no pest known to the plant grower is more generally feared than this persistent and dangerous insect. Losses caused by mealy bugs are enormous, not only from their effect on the plants infested, but also from the fact that other plants placed in infested houses are quickly attacked. Many species of plants are subject to the attack of this pest; most of the soft greenhouse plants as well as certain of the ornamental shrubs are susceptible.

Mealy bugs belong to the scale insect family but differ from the others by the fact that they can move around throughout their life. They are called mealy bugs because of their mealy or waxy covering. Their habits and the types of damage they do, are very similar to those of the other scale insects. Due to their ability to move around and the fact that they can hide in cracks and in the soil, however, causes them to be much more feared than are the scales. In determining control, consideration must be given to these facts as well as the fact that the waxy covering makes it extremely difficult to wet the insect with a spray.

Thrips.

Many species of this pest attack ornamental and flowering plants. In some sections the seriousness of infestations by thrips cannot be over estimated. This is particularly true with Rose, Carnation and Chrysanthemum culture.

Thrips scrape the leaves and suck the juices from the tissue and also work in the flowers and buds. They cause faded leaves and deformed and puny flowers. The excretion of a reddish-brown substance causes a brown spotting on the plants where they are feeding.

Complete freedom from thrips is almost an impossibility with many growers.

Considerable interest has been shown during the past two or three years in the use of high-boiling emulsified petroleum oils of the lubricating types. Considerable work has been done in the United States and in Australia where this class of oil has been applied for the control of mealy bug, scale and red spider.

It has been shown that these oils can be used almost with impunity on the most delicate types of foliage without the risk of scorching. Some of these emulsions are prepared to contain eighty per cent. oil emulsified mechanically in the presence of a protective colloid. No soap is used, which means that they can be used with all classes of water without the incorporation of an outside spreader.

Research has shown that the oils have to be highly purified. Ordinary petroleum or engine oil cannot be used owing to the presence of sulphur compounds and great care has to be exercised in the manufacture and rectification of the oils to exclude all traces of sulphur and sulphur compounds.

These emulsions readily mix with water and are generally applied at the rate of a one or two per cent. solution. They may be used with nicotine, which greatly enhances their value.

One brand of oil with which the writer has had a fair amount of experience this season is known as "Volck," named after the inventor of the process of manufacture.

When sprayed on the foliage, the emulsion breaks down, leaving a microscopically thin film of oil. This has been shown to be very successful for the control of spider, scale, mealy bug and a number of other insects.

Cladosporium.

This season has been characterised by the early appearance of mildew (Cladosporium fulvum), which, if not promptly checked, will undoubtedly considerably reduce what would otherwise be a heavy crop of Tomatos.

In the various growing districts, Tomatos look exceptionally well this year, possessing fine stamina, vigour and vitality. In the Lea Valley there has been a fair amount of stripe disease, notwithstanding the use of the standard dressings of sulphate of potash.

Some growers attribute the early appearance of mildew to shutting down the fires too early in the season; others consider it is purely a question of ventilation. No doubt the real explanation is a combination of these two factors.

I tried one or two interesting experiments in the latter part of last season. These consisted of vaporising naphthaline at the rate of fifteen to twenty ounces per 1,000 cubic feet, in the naphthaline fumigating lamps, and maintaining a high temperature with plenty of humidity and fumigating prior to pulling out the haulm; the object being to destroy red spider and its eggs before they had a chance of migrating to the ridge boards and other places of hibernation.

This was followed by fumigating with formaldehyde solution, 40 per cent. vaporised in the naphthaline lamps at the rate of ten ounces per 1,000 cubic feet; the object in this case was to destroy any fungous spores remaining in the house.

Up to the time of writing, the crops in this house this year are free from red spider and mildew, whilst other adjoining houses on the nursery are affected to a greater or lesser extent.

The results of these experiments are interesting, and they offer a means of starting the season with a fairly clean house.

On some of the nurseries where mildew has not appeared, the growers have been induced to take preventive measures in the early stages, either by spraying or dusting with some suitable material. Others are utilising various methods for vaporising sulphur, and so far this preventive treatment appears to have been very successful. Once the mildew is well established it is almost impossible to eradicate and sometimes very difficult to even check the rapid growth and spread of the disease.

The grower should endeavour to have a coating of some suitable fungicide on both the upper and under sides of the foliage before the spores have had a chance of germinating.

The materials most commonly used are :—

(1) Ammonium copper carbonate solution containing a saponaceous spreader used at the rate of one gallon to 80 to 100 gallons water. This should be applied as early as possible, otherwise ripening fruit may have to be wiped in order to remove the slight deposit.

(2) Ammonium polysulphide solution, at the rate of one gallon to 200 gallons of water, to which has been added 10 to 15 lbs. of good quality soft soap. The advantage of ammonium polysulphide solution is that it leaves an almost imperceptible film of sulphur, which is not likely to affect the marketable value of the crop and so eliminates the necessity for wiping.

(3) Colloidal sulphur has been used, particularly in the Worthing district, with a considerable amount of success. Again, in the application of this material, it is desirable to use it in the early stages in order to eliminate the necessity for wiping the fruit, as colloidal sulphur leaves a perceptible deposit. It is used at the rate of 2 lbs. to 100 gallons of water, in which about 4 lbs. of soft soap has previously been dissolved to give the mixture the necessary wetting power.

Various dusts have been used for the control of the disease on commercial nurseries, but the application of dust specifics and the success resulting from their use depend very largely on the materials used, and the degree of fineness, in conjunction with a suitable means of application.

When dusting it is very desirable to produce a cloud in the house, and the dispersal of the cloud will depend entirely upon the size of the particles.

(4) Dry Dusting Sulphur. This consists of sulphur which has been ground to pass a 200 meshes to the inch sieve. It appears to be only effective in the presence of bright sunshine, and a certain amount of humidity is desirable.

(5) Green Sulphur. This is a dry, dusting form of sulphur, and usually contains anything from 33 per cent. to 43 per cent. actual sulphur (free), with a small proportion combined with iron in the form of sulphide.

Green sulphur has had an extended use as a dust, particularly under glass, but its chief value is the fact that it is usually in a very fine state of division and therefore easily "dusted."

Its efficiency as a fungicidal dust, however, cannot be compared with that of a good quality dusting sulphur. Sieving analysis show a good sample to give :—46 per cent. passing a 200 meshes to the inch sieve; 23 per cent. retained by a 200 meshes to the inch sieve; 15·5 per cent. retained by a 150 meshes to the inch sieve; 10·5 per cent. retained by a 120 meshes to the inch sieve; 5 per cent. retained by a 90 meshes to the inch sieve.

Comparing the price of green sulphur with that of any good dusting sulphur, there is little doubt that it is an expensive proposition, particularly when its sulphur content is taken into consideration.

(6) Vaporising sulphur by means of the Rota Generator or Campbell's Fumigator has also given very good results.

An interesting fact worthy of record is that the "Volck" oils mentioned above, when applied to the foliage, produces a microscopically thin film over the foliage, on which the spores of mildew are unable to germinate. Whilst they cannot be considered to be fungicidal, they can be claimed to have a fungicidal action, *Theodore Parker*.

APIARY NOTES.

QUEEN REARING.

At this time of the year bees in most hives show signs of swarming. Old-fashioned apiarists allow nature to work in her own way and just hive each swarm as it appears, without enquiring too closely what kind of queen is at the head of the swarm. But closer examination of the matter shows how vital the queen is and, unless some attempt is made to control the production of queens, the hives will contain a motley crew, and results will be as varied. It is not an accident that one hive gives a surplus of honey and another a deficiency; it generally means that one has a good queen and the other has not. This variation is noticeable even where the greatest care is taken in rearing only the best possible queens. Not every bee-keeper realises the need for obtaining the best possible queens to head his stocks, and many bee-keepers grudge the price of a queen when it is suggested they should send to a reputable queen-breeder for one of his selected strain. But even though the small sum necessary for a good queen be grudged—and if only it could be realised how quickly that sum is returned with interest it would not be grudged—no one can fail to see that by constantly re-queening from his best stock, and not allowing the matter to remain entirely at the discretion of the bees themselves, he is bound, in time, to improve the honey-gathering qualities of his bees.

Therefore, at this time of year, every bee-keeper should keep a record of what his hives have done, and when the very best hive swarms he should go through it immediately and carefully cut out all the cells he can find, leaving but one. He will, in that way, save another swarm issuing, and he will have ensured enough cells to re-queen any hives that have poor queens. Cut out enough of the comb to avoid injuring the nymph in the cell, and then, going to the hive that is unsatisfactory, kill the queen, and cut a hole in one of the combs just the right size to take the cell brought from the other hive. Keep the cell the proper way up, *i.e.*, with the end hanging downward. It will be necessary to protect the cell from the bees, and this is done by a West cell-protector, obtainable for a few pence from any appliance dealer. In a few days the egg will hatch and produce a virgin queen, which in turn will mate and give a stock headed by a queen of the owner's best strain.

There will probably be many cells to spare. Now is the time to make economic increase of the stock. Take a couple of combs, one of honey, and one with a little sealed brood, from any hive that can spare it, place them in an empty hive with all the bees adhering, close up the entrance for thirty-six hours, inserting one of the cells before doing so, and again a virgin queen will hatch, in due course, mate, and provide a nucleus having a laying queen. This can be strengthened after the honey flow by a little more brood, and so by the end of the season another good stock at little or no cost to the honey harvest will be secured.

By these means increase may be obtained and only one hive allowed to swarm. Even that is unnecessary if a little trouble is taken. Examine the hive containing the good queen a little before the time she will swarm, catch the queen just before the queen cells are capped over, make a nucleus of her, and leaving only one cell, cut out the rest as described above. A few days later go through the hive again, and if more cells have been raised, which is quite likely, cut them out too. In this way, bees may be prevented from swarming, increase to any extent desired may be made, and all the stocks may be re-queened annually from the best queen of the year before. *J. Mavie.*

DEEP CULTIVATION.

DURING the past few months there has been much discussion in the pages of *The Gardeners' Chronicle* as to the advisability of bringing sub-soil to the surface and to bury the top soil. Some have approved of the practice, others have condemned. It appears to me that both are not altogether correct in their views, mainly because they are viewing the problem from a different standpoint.

Mr. Beckett[*] points out the value of deep trenching, and while in the main I agree with the views expressed, there are some sentences which seem to call for further discussion, *e.g.*, "I am quite confident that the results obtained are profitable, even having regard to the extra labour employed." Viewed solely from the standpoint of exhibition vegetables, this may be correct, but I do not feel confident that to trench soil four feet deep for general vegetable crops is a sound economic proposition. If it be a sound economic proposition, it is rather strange that market gardeners growing vegetables for market do not more readily adopt the plan. Again: "Afford the plants proper root-run and good results will follow; no matter what kind of sub-soil is brought up to the top, if the impoverished top spit is buried there will the finest results accrue." The truth of this statement will depend upon at least two factors, the kind of sub-soil, and the treatment of the subsoil after it is brought up.

It is a common practice of people laying drains to fill in the holes by placing the top spit in the bottom and leaving the sub-soil on the surface. If a number of such filled-in drains be examined for a season or two afterwards, it will be found that vegetation is never very good at first, but that on some of the drains, after the first season, plants begin to establish themselves, and after a few seasons the vegetation is good. On others the vegetation is very poor for a number of years. This would seem to point to the fact that subsoils vary considerably; some can very soon contribute enough food to support plant life, but others cannot do so. A more probable reason is that the first types do not contain plant poisons in the shape of unoxidised materials, but the second types do.

As regards the treatment of the sub-soil after it is brought up, if leaf-soil, manure and wood-ash are mixed with it good results will follow. If these materials are in short supply, then the practice of bringing up quantities of sub-soil to the surface will be followed by a long or short period of partial sterility, according to the type of sub-soil brought up.

Some that have condemned the practice of bringing up sub-soil have been inclined to be definite that the practice is always wrong, whereas under certain conditions, very great soil improvement can be made by bringing up the bottom layer. On certain soils where the sub-soil is of the opposite type to the top soil the practice of bringing up sub-soil pays. Mansfield[*] gives a very interesting account of the claying of certain fen soils. He writes under "Objects": "Claying is usually done in the winter months, when other work on the farm is slack, and the field selected has generally carried corn the previous year. The objects aimed at are:—

(1) "To apply a maximum amount of clay to the surface soil with a minimum of labour."

(2) "To avoid burying any of the 'made' top soil but to conserve it on the surface;"

(3) "To replace the clay removed, refilling the trenches with inert peat, material which it is useless to incorporate with the top soil, which already contains excess of organic matter, but which, being of a porous nature, will assist drainage."

This article should be closely studied by those who are interested in the subject of the cultivation of the soil. It should be noted that in this case the material brought up is not, strictly speaking, the sub-soil, but a layer of material lying underneath the peat sub-soil.

The practice of claying certain lands has been carried out for many years; if the clay lies directly below the soil to be treated, so much the better, but more frequently the clay has to be imported from a distance. Hall[†] points out that for this purpose marl containing carbonate of lime is always of more value than clay, because the clay is so little friable and so sterile itself that the improvement is a slow one. The same writer also draws attention to the fact that old cultivated gardens are often in need of claying or marling, especially when such gardens are situated upon gravel soils.

If the above review be correct, it would appear that under some conditions (if it is an economic proposition), the bringing up of sub-soil in quantity is good practice provided the sub-soil can be made into good material by the addition of various ingredients. The soil of a garden so treated can be deepened considerably, and the "worn-out" top soil placed in a good position to regain some of its lost properties. It is well if a definition is given to the term "worn-out" soil, because various people use this term in several ways. I am using the term to mean a soil which, by constant cultivation and manuring, has had all the finer clay particles washed down to lower levels. Such a soil is extremely open, has lost all power of cohesion, and suffers from lack of water in a dry period. Further, it is often acid owing to its high organic content. If one is in the position to be able to carry out occasional trenching, and with the judicious use of lime or chalk, "worn-out" soil should not occur. Under most conditions the bringing up of the sub-soil and leaving it untreated on the surface is bad practice, but that there are special occasions when the sub-soil well-mixed with the top layer of soil is very good practice.

I am inclined to think that Baines,[‡] writing more than fifty years ago, gives us some useful advice with regard to trenching: "All ground that is used for vegetable crops should be trenched every three or four years, a couple of inches of fresh earth being brought to the surface on each occasion. This more especially applies to old gardens, where, if it is not done, the surface becomes exhausted." It is necessary to discriminate between old and new gardens, as, in the latter, at a comparatively small depth, the soil is yet crude. To bring any considerable quantity of this to the top and more or less to bury the surface soil that has, by stirring and exposure to the sun and air, together with the application of manures, become better adapted to the requirements of plant life, would be a serious mistake, which would be most injurious in its consequence to the crops for a year or two afterwards. *Somerset.*

VEGETABLE GARDEN.

CELERY.

CELERY for early use should now be growing freely, and if the weather is dry, the plants will be greatly benefited by giving the roots copious supplies of water, and diluted liquid manure occasionally. Trenches are not necessary for this early crop, as the plants may be grown successfully on the flat or in frames in which early salads, etc., have been grown, and the blanching of the stems may be done by means of bands of stiff brown paper. The paper should be cut about six inches wide, and long enough to wrap around the stems twice.

When the plants are about half-grown, remove all side-shoots, and place the first band around the base of each plant, making it secure with broad bast.

Dust the soil lightly with soot to ward off slugs, and then mulch the plants with old Mushroom-bed manure.

Watch the plants carefully to see that the hearts are growing upright, and see also that the ties are not too tight. Before placing the second band of paper in position, remove the first to make sure the stems are clean, then replace it, and tie the second band just above the first.

The stems are lengthening fast now and will soon require another band of paper above the second, but take care to examine the plants before doing this. Tall-growing varieties will possibly require another band above the third, and this will ensure the stems being well blanched up to the foliage. Dust the latter slightly with old soot during showery weather, as this will help to ward off the Celery fly, and will also cause the foliage to be a dark green colour. A great advantage of this method of blanching is that the plants may be well watered right to the time they have finished growing, and the stems will also be much cleaner. A broad piece of bast should be tied around the foliage when the plants reach maturity to prevent the wind breaking it down.

The planting of maincrop and late Celery should now be completed in well-manured trenches. Keep the plants well supplied with water, and damp them overhead every afternoon with a rosed can. Celery can hardly be overwatered during the summer, as it is a moisture-loving plant; occasionally the soil should be drenched with diluted manure water, and the trenches mulched with half-decayed manure. It requires about six or eight weeks to blanch Celery grown in this way; therefore the earthing up process should be started about six weeks before the crop is required for use. The plants should first be divested of all side-shoots and bad foliage, then tied with matting about half-way up the stem to prevent the soil from reaching the hearts. Dust the plants liberally with soot, and give the trench a final soaking with water. Place a garden line down each side of the trench, about six inches from the edge, cut along this with the spade as deeply as possible, take out a trench the width of the spade along the ridge, and then carefully place this soil around the plants, taking care not to drop any into the hearts. Break the earth finely, and do not put a large quantity around the plants at the first operation. Make it fairly firm and, when the row is completed, cut the ties, and the plants will not need further attention until the next earthing-up is done in about ten days or so. The plants should again be tied up, unless an assistant can be spared to draw them together by the hand, and the process repeated.

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[*] Beckett, E. The Value of Deep Trenching. *Gard. Chron.*, Dec. 18, 1926, p. 495.

[*] Mansfield, W. S. The Claying of Fen Soil. *Journal of the Ministry of Agri.*, Vol. XXVIII., p. 412.

[†] Hall, D., The Soil.

[‡] Baines, T. Trenching. *The Garden*, Oct. 16, 1875, p. 330.

The stems will lengthen somewhat during the earthing up process; therefore, another and final earthing up will be needed, and this, if possible, should be completed before there is danger of severe frost. Especially is this desirable in the case of late Celery, or it will not keep well. Dust the plants freely with soot every time earth is drawn up to them, for this material not only helps to ward off the Celery fly, but also acts as a stimulant to growth. Make a point of earthing up the plants only when they are quite dry; it is a good plan to water the plants one day and earth them up the next, if the day is fine. The bank when completed should be made firm with the back of the spade, as a steep ridge helps to throw off superfluous moisture during the winter.—*R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HOME CORRESPONDENCE.

Deterioration of Strawberries.—The leading article on Strawberry, to which your correspondent draws attention on p. 440, vol. LXXXI, follows much on the same lines as the lecture given at Hereford, on May 18, by Mr. L. N. Staniland. While the remarks he made may, to some extent, apply to those who adopt horse cultivation, it cannot be said that many of our leading private growers are likely to neglect their Strawberry plantations. Already two correspondents have shown the care they have given their plants, and it is to be hoped that some of the commercial fruit-growers of Kent and Hants will contribute to this correspondence. I have grown large quantities of Strawberries, both in Kent and Berkshire, and the plants, even with horse cultivation, grew like Cabbages. Strawberries in commercial areas were often severely defoliated with a bagging hook and the ground worked constantly with horse hoes, yet they became large and healthy. What is needed, apparently, is a certificate of health, as we have against Potato disease. It has been the custom of growers to obtain a fresh stock of Strawberry plants from time to time, as of Potatos, to avoid deterioration; yet here, as in several gardens in this and adjacent counties, the home stock is growing with much more vigour than those obtained from a different district, although such importations have not necessarily been from the same source. From observation, there appears to be two essential factors for successful Strawberry growing. The stock must be grown entirely for propagating purposes, and the plant's vitality must not be impaired by over-production, secondary runners not being allowed to develop. Correspondents have appealed for an explanation of the causes and remedies for the pests which attack the Strawberry, but, so far, we have only had cultural hints by entomologists. We should welcome information, whether spraying with an insecticide or fungicide is recommended, and the time the application would be most efficacious. It may be that the last three successive winters have been detrimental to the growth of Strawberries. Another reason advanced is that owing to the dearth of animal manure, there has been an indiscriminate use of artificial fertilisers unsuited to certain soils. Sulphate of potash is probably the one most suitable fertiliser. I submit the following suggestions with regard to this crop. The ground for new plantations should be well trenched and enriched with a liberal dressing of farmyard manure. The plants should be sprayed with or dipped in an insecticide before planting them, and be moulded up during the winter, a further spraying, to be made in April, with a combined insecticide and fungicide, such as lime-sulphur-paraffin emulsion. Sulphide of potassium, though excellent for killing red spider as well as disease is, I find, of no use in damp weather, being easily washed off the plants. Finally, the Board of Agriculture should make the " Schedule of Plant Diseases " more widely known by posters in rural districts, and encourage County Councils to give lectures on these matters, particularly in the districts most concerned. *A. J. Hartless, Kings Walden Bury Gardens, Hitchin, Herts.*

SOCIETIES.

ROYAL HORTICULTURAL.

AMATEUR SHOW.

Tuesday, June 28.—The special Amateur Show of the Royal Horticultural Society, which was held on Tuesday last in the Vincent Square Hall, Westminster, was the best of the three of the series that have been held, and, in view of the unfavourable season, this points to greater success in the future. Practically all kinds of garden flowers were included in the schedule, and in most classes the exhibits were of fine quality, especially flowering shrubs, Sweet Peas and Roses.

The schedule was divided into three divisions, A, B and C, and in each of these a special cup was offered to the most successful exhibitor. They were awarded as follow: Division A, to Sir Wm. Lawrence, Bt., who obtained thirty points; Division B, to G. H. Fisher, Esq., with thirty-six points, and Division C, to C. Luckin, Esq., with thirty-six points. The Garden Club Cup offered for the best exhibit in the show was awarded to F. W. Frank, Esq., for Sweet Peas, who also won the Silver-gilt Medal of the National Sweet Pea Society for this superb exhibit.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mrs. E. M. Wightman, Mr. J. M. Bridgeford, Mr. H. J. Jones, Mr. W. H. Page, Mr. A. E. Vasey, Mr. James B. Riding, Mr. William Howe, Lady Beatrix Stanley, Mrs. Helen Lindsay-Smith, Mr. D. B. Crane, Mr. W. B. Gingell, Mr. Arthur Turner, Mr. M. C. Allwood and Mr. W. D. Cartwright, Secretary.

Section B.—Mr. T. Hay (in the chair), Sir William Lawrence, Bt., Mr. G. Reuthe, Mr. F. G. Preston, Mr. George Harrow, Mr. James Hudson, Mr. W. B. Cranfield, Mr. G. Yeld, Mr. E. H. Wilding, Mr. Amos Perry, Mr. A. Bedford, Mr. R. D. Trotter, Mr. Mark Fenwick and Mr. N. K. Gould, Secretary.

Awards of Merit.

Eucomis bicolor.—An exceptionally well-grown specimen of this South African bulbous plant was shown. The stout, erect racemes were well furnished with greenish-white flowers which have purple filaments. Shown by Mrs. Carl Holmes, The Node, Welwyn, Herts.

Philadelphus Atlas.—A free-flowering Mock Orange of graceful habit, bearing large, flattish, white flowers which, unfortunately, do not appear to be fragrant. Shown by Sir William Lawrence, Bt., Burford, Dorking.

Veronica Matthewsii.—An attractive, shrubby Veronica of graceful habit and medium size. The small leaves are narrowly ovate-lanceolate and the plant bears numerous racemes of small, white flowers, faintly flushed with lilac. Shown by Messrs. Wallace and Co.

Competitive Classes.

The groups of miscellaneous plants were a very attractive feature of the show, and they were arranged with considerable skill and taste. The first prize was won by A. P. Brandt, Esq. (gr. Mr. J. W. Banks), Bletchingley Castle, with a charming arrangement of highly coloured Codiaeums (Crotons), Lilium longiflorum, Tydaea amabilis and various decorative Ferns. Dr. J. H. C. Roy (gr. Mr. A. Falconer), Mental Hospital, Cheadle Royal, was a good second, and he also employed Codiaeums to good effect. In the centre there was a batch of the graceful Humea elegans, while Dracaenas, Gesneras and well-coloured Coleus were also employed. Sir William Lawrence, Bt., was third in this well-contested class.

Sweet Peas were the finest of the special flowers at the show, and competition was so strong that many really good collections were unplaced in the prize lists. In the open classes, the first prize and Silver-gilt medal of the National Sweet Pea Society were won by F. W. Franks, Esq. (gr. Mr. W. Humphrey), Loampits, Tonbridge, with twelve superb vases of Sweet Peas. The chief varieties were Powerscourt, Youth, Magnet, Mammoth, Daventry, Constance Hinton and Picture. Major C. B. Krabbe (gr. Mr. A. W. Gower), Calcot Grange, Berkshire, was a very good second in this large class, and he had excellent vases of Coraline, Warrior, George Shawyer, Constance Hinton and Hebe.

In Division B, the best Sweet Peas were shown by W. Huffey, Esq., Boormans, Tonbridge, who had six magnificent vases of Magnet, Youth, Powerscourt and three other fine varieties. Dr. G. S. Leggatt, Harpenden, was second, and he had beautiful vases of Magnet and Hebe. The same high quality was evident in Division C, where C. W. Renin, Esq., Clewer, had splendid vases of Powerscourt, Hebe and Britannia.

The exhibits of Roses were of higher quality than, in view of the season, the judges anticipated, and there were many very good exhibits of exhibition and garden Roses. C. W. Mander, Esq., Blacketts, Chorleywood, had the best twelve vases of exhibition varieties in the open classes, and he included blooms of George Dickson, Etoile d'Hollande, Mrs. Wakefield Christie-Miller and Augustus Hartmann of high merit. He was also first with six vases of Ramblers, showing Cupid, Carmine Pillar, Lemon Pillar and other useful varieties. The Rev. F. R. Burnside, Stanbridge Rectory, had a show box of twelve magnificent blooms, including Madame Melaine Soupert, Dean Hole and Rev. F. Page-Roberts; and his six first-prize vases included splendid blooms of Ramon de Escofet, Mrs. Henry Bowles and Madame Melaine Soupert.

C. H. Rigg, Esq., Titley Lodge, St. Albans, had a very good show box of Roses in which he included George Dickson, Mrs. Henry Morse and Lieut. Chaure, of high quality. Mrs. Cribb (gr. Mr. J. Stevenson), Northwood, who showed Paul's Scarlet Climber, Dr. Van Fleet and other varieties, was first in the class for six vases of free-flowering sorts.

The exhibits of cut sprays of hardy shrubs were very interesting and of great merit. In the class for twelve vases Lionel de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Hants., and G. W. E. Loder, Esq., Wakehurst Place, Sussex, were placed equal first. The former had Magnolia macrophylla, Olearia semi-dentata, Zenobia pulverulenta, Leptospermum Chapmanii and Carpenteria californica. In his collection, Mr. Loder included Leptospermum ericoides, L. scoparium Nicholsii, Veronica amplexicaulis and Callistemon salignus. In other exhibits there were good vases of Akebia floribunda, Magnolia parviflora, Abutilon megapotamicum and Robinia hispida Hostii.

There were only two exhibits of twelve spikes of Delphinium, and that shown by Mrs. M. Hamilton (gr. Mr. G. Smith), Kings Mead, Claygate, was decidedly the better. She had good spikes of Mrs. Townley Parker, Blue Bird, Robert Cox, and a blue seedling. In his second prize collection, H. K. Farnell, Esq. (gr. Mr. E. H. Palmer), The Elms, Acton Hill, had good spikes of several seedlings.

Sir Brodie Henderson (gr. Mr. W. Eggleton), Epping House, Hertford, was a good first with six vases of Perpetual Carnations, and he had excellent blooms of Topsy, Eileen Low and Laddie. Mrs. Carl Holmes, The Node, Welwyn, included vases of Topsy and Brilliant in her second prize exhibit.

The best Border Carnations were staged by J. Fairlie, Esq., Acton, who showed splendid vases of Ravenswood, Mrs. Edmund Charrington and Sam Griffiths. Mr. R. Morton, Woodside Park, was second, and he had good blooms of Gordon Douglas and Sam Weller. The only exhibit of six hardy Pinks, was an admirable collection from R. Morton, Esq., and he deservedly received the first prize. His varieties were Model, Mrs. Pryor, Coronation, Mrs. George Walker, Lyric and Bridesmaid.

Considering the unfavourable season the exhibits of herbaceous Paeonies were very good. Sir Brodie Henderson, who was first, had admirable vases of double-flowered varieties. C. W. Mander, Esq., was placed second.

It was scarcely the best season for alpines in pots, and there were only two exhibits. The first prize was awarded to Col. Grey, Hocker Edge, Cranbrook, who included Silene Hookeri and Primula facchinii, two rare alpines, and Gazania splendens, 2nd Sir William Lawrence, Bt. The first prize bowl of Water Lilies, shown by Lionel de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Hants., contained fine blooms of Escarboucle, Gladstonianum, Mrs. Richmond and Mooriana.

The two first prizes for Rhododendrons were awarded to Lionel de Rothschild, Esq. Amongst his hybrids he had beautiful trusses of Madame Jules Porget and Mrs. L. H. Dunnett, while his species included R. Griersonianum and R. didymum.

Hardy herbaceous flowers and annuals made a very attractive display and, although the exhibits were mostly of the sorts to be seen in the average garden, they were well-grown. Lionel de Rothschild, Esq., was first in the open class, and he showed Allium giganteum, Clematis integrifolia coerulea, Rhazya orientalis and Richardia africana. W. B. Crosfield, Esq., Undercroft, Reigate, had the best collection of annuals.

Orchids were not largely shown, but the classes for flowering and foliage plants were very popular. F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, was first with six excellent foliage plants of such sorts as Caladium, Acalypha and Cordyline. A. P. Brandt, Esq., was a good second. T. Crawford, Esq. (gr. Mr. G. Whiting), Whitehall, Bristol, was an easy first with six splendid double flowered, tuberous-rooted Begonias. The only exhibit of British Ferns was sent up by W. B. Cranfield, Esq., who had excellent specimens of such genera as Polystichum and Lastraea.

The class for nine flowering plants was disappointing. Sir William Lawrence, Bt., was first, and he showed Hydrangea Dumotii, Tillandsia Lindenii, Zephyranthes carinata, while F. C. Stoop, Esq., who was second, included plants of Ixora, Hippeastrum and Richardia Elliottiana.

At the end of the open amateur classes there were three classes which should have been especially interesting, but the exhibits fell a little short of expectations. The prizes which were offered should have been sufficient to attract quite good novelties. One class for a new species, introduced to cultivation since 1920, another was for a new garden plant raised since 1920, and the third class was for any plant not mentioned in the schedule.

The best new species was Calceolaria filicaulis, shown by Sir William Lawrence, Bt., a calceolaria which has a certain resemblance to the Andean species, which received an Award of Merit a week previously. The leaves are similar, and the smaller flowers have the pouches flattened. Col. Grey was second with a small plant of the same species, but distinct in its greyish foliage. Lionel de Rothschild was placed third with Rhododendron didymum, a beautiful, reddish-maroon species from China.

The first prize new garden plant was a very handsome Disa hybrid, named Pink Domino. There were several spikes, about three feet in height, bearing large flowers which had pink flushed standards and vivid rose-pink sepals. This was shown by Col. Stephenson Clarke, C.B., Borde Hill, Cuckfield. The second prize was awarded to Mrs. Carl Holmes, The Node, Welwyn, for a well-grown Coleus, and Sir William Lawrence, Bt., was third, with a white variety of Rehmannia angulata. The class for a vase or pot of "any other plant" brought a variety of exhibits. Sir William Lawrence, Bt., was first with Strelitzia juncaefolia; Lionel de Rothschild, Esq., was second with Phormium tenax; and Mrs. Carl Holmes was third, with Begonia cathayana, a handsome foliage variety.

FEDERATION HORTICOLE PROFESSIONNELLE INTERNATIONALE.

Nearly one hundred delegates attended the annual Conference opened at Geneva on June 20. The Conference commenced at 8.30 a.m., and the delegates represented Great Britain, France, Holland, Belgium, Germany and Switzerland. Proceedings commenced well on time, by a speech of welcome delivered by the silver-tongued M. J. Rochaix, a member of the National Council and Minister of the Interior and of Agriculture of the Canton of Geneva. The welcome over, M. J. Vachoux, President of the Association of Swiss Horticulturists presided, and to such excellent purpose that business proceeded swiftly.

Messrs. E. Laxton, H. T. Mason, W. E. Wallace, C. Engelmann, W. Clark, I. Godber, C. Du Cann, C. H. Curtis, J. S. Brunton and Evans were the British representatives; among the French representatives we noticed M.M. Barbier, Turbat, Rivoire, Grandorge, Sauvage, L. Levavasseur, N. Levavasseur and Rabier; from Holland came Messrs. Krelage, Ruys, Dykkus, Bonthius and Mensing; while M.M. Pynaert, Braeckman, Temmermann and Haussens came from Belgium, and Messrs. Schetelig, Fachmann, Reischle and Blossfeld, from Germany.

The general report of the Secretary, M. Turbat, was accepted, and consisted chiefly of the minutes of the Paris Conference of 1926, and some correspondence. The Treasurer's report showed a balance in hand, but M. Sauvage pointed out that the International Bureau for the registration of new plants was not taken advantage of; indeed, only one plant—a new Rose from M. Turbat—was registered during the past year. In a subsequent discussion, it was agreed to continue the Bureau for another year and then, unless it is utilised for registration purposes, it will cease. The German delegates considered that no plant should be registered unless it had received an award from some authoritative body, but the Frenchmen asserted that registration was primarily for the purpose of securing a name for a new plant or seedling, so that the same name might not be used again; in short, to secure priority of name and prevent duplication. A Government registration bureau for new plants appears to be likely in Germany.

The question of admitting Austria to the Federation again came up for discussion, and the Conference agreed that if the Austrian Association could gather its professional horticulturists into one body, apart from amateurs, it would be admitted next year.

The reports of the condition of horticulture in the various countries concerned were taken next, but as most of them were already in print and had been circulated they were accepted as read. M. Pynaert referred to the increase of cultivation in Holland and Belgium, and asserted that unless the growers kept their plants thoroughly clean they would find the markets of other countries closed against them. M. Turbat complained that the reports were often received too late to be printed for the Conference, consequently the various national secretaries were admonished and bidden to do better in future so as to help the general secretary, M. Turbat, in his arduous duties.

Questions of the transport of horticultural produce were of more interest to the continental representatives than to the British, and a discussion concerning the need for co-operation so as to secure general international rates of carriage occupied a long period. Rates current in various countries are to be tabulated and an effort made to secure standard international rates, according to the kind of produce, *i.e.*, perishable, heavy, bulky, etc.

Quite naturally a great deal of warmth was evident when pathological problems came under consideration, and one cannot help admiring M. Pynaert's persistent efforts to break down the American prohibition of imports on the ground of possible infection. The American quarantine regulations hit the Belgian and Dutch trade very hard, and now that bulbs are prohibited, Holland is more severely affected than ever. The Dutch delegates pointed out that prohibition was being used to camouflage protection. The German representatives stated that if prohibition continued to increase—as it was increasing—Germany would have to adopt prohibitive measures as a form of protection to its own horticultural industry.

Eventually the following resolution was drafted and carried:—That the Associations affiliated to the F.H.P.I., considering that the growing extension of restriction and prohibitive measures constitutes a more and more formidable menace to the normal horticultural trade, and that international horticultural trade will be speedily destroyed if no solution is found to the present state of affairs, decides to follow out the programme of action established by the Conference of Paris in June, 1926. Further, that Article 6 of the Rome Convention should be amended as follows:—"Each country reserves the right to temporary prohibition where it is recognised that exports constitute a real infection to the country of importation."

This lengthy debate brought the morning session to a close, and an adjournment was made to the restaurant in the beautiful Parc des Eaux-Vives, close to the Lake of Geneva, where the delegates and their ladies were entertained to lunch by the State Council of the Canton of Geneva. There were the usual thanks and congratulations suitable to the occasion, and Messrs. Rochaix, Pynaert and Krelage were the principal speakers.

Matters did not progress so fast in the afternoon as an excellent lunch and lovely weather appeared to place some restraint upon the delegates. However, after several committees had presented their reports on special subjects and the auditors had passed M. Sauvage's accounts, the subject of customs' duties on horticultural produce occupied the attention of the Conference.

The subject of forming a European Customs Union was continued at the opening of the third session of the Conference, at 8.45 a.m., on Tuesday morning, when, it must be admitted the brilliantly fine morning tempted many of the delegates to wander by the lake at this early hour, although the majority arrived a little later. Most of the nationalities agreed to the formation of such an Union, but Germany did not assent, and the British did not vote on the question, preferring to reserve an opinion until the H.T.A. and B.F.F. had discussed it at home and, if necessary, conferred with the government departments concerned.

The discussion was carried on chiefly between the French and Belgian delegates. Belgium protested against the increased custom tariffs and disagreed with M. Turbat's statement that the situation in France—exchange, state conditions and need to protect the horticultural industry—necessitated the recent increase of customs' duties. M. Pynaert pointed out that even Germany had not increased its customs' duties on horticultural products since 1924, when the Mark was of unstable value, therefore one of the reasons given by France did not hold good; he suggested that the two Governments should confer for the purpose of considering tariffs and arranging reasonable customs' duties in connection with the horticultural industry. Germany, through Mr. Fachmann suggested that it would also have to raise tariffs, but the speaker reminded the Conference that at its meeting of 1926 there was a suggestion that the countries represented by the F.H.P.I. would confer on the tariff question, but nothing had been done. In regard to an European Customs Union opinions were divided. but the discussion was adjourned by M. Vachoux, who closed the session to enable the delegates to visit the Parc de l'Ariana, one of the beauty spots of Geneva, where there is also a wonderful museum containing collections of tapestry, paintings, carvings and beautiful china. In this building the Administrative Council of the town of Geneva gave a reception to the Conference delegates.

The relations between the horticultural industry and the respective governments were considered, and resulted in a very interesting discussion. It was agreed that in every country someone definitely concerned with commercial horticulture should be attached to or directly associated with the Ministry of Agriculture, so that any advantages offered to agriculture might be obtained for horticulture. Apparently, elsewhere, as often happens in England, horticulture fails to obtain the privileges accorded to agriculture; nevertheless the Conference agreed with M. Rabier that horticulture should remain under the Ministry of Agriculture in each country, and that, at least, there should be a horticultural advisory committee attached to the ministry.

That horticulture should be directly represented at the Rome Convention was considered eminently desirable, and the various horticultural associations were advised to see that their government sent a horticultural representative to the next Convention. Apparently the Belgian Government will not send a representative, so the Belgian delegates asked Mr. Krelage to watch their interests for them at Rome. Mr. Krelage agreed to do so, but pointed out that of course, he would have no power to act officially on the part of Belgium.

Complaints were made that the Swiss papers would not receive advertisements from horticultural traders of other nationalities; it was ruled, however, that this was hardly a question for the Conference, which had no power to control the press of any country. We learned that the Swiss press has decided not to accept horticultural trade advertisements from other countries.

There was the usual talk about "dumping," but, apparently, nothing can be done to stop it, although each country has its black list of offenders, and those traders who sell wholesale in the general way and then dump their surplus on the purchasing country, are beginning to find that it does not pay them to do so because many of their regular customers object to such practice, and show their objection by withholding orders.

Many other matters were considered by the Conference, and there were numerous informal chats between traders of different nationalities, all of which tend to create and maintain good feeling. The Federation decided to hold its next annual Conference at Ghent in 1928, and appointed Mr. Charles Pynaert as President, with Mr. Edward Laxton as Vice-President for the ensuing year. Messrs. Turbat and Barbier were reappointed Secretaries. M. Turbat desired to be relieved of the duties, but was requested to continue, and to find some young enthusiast whom he could train to fill the post.

The National Secretaries agreed to assist M. Turbat so much as possible, and the Conference decided to reduce the amount of printing as a further relief. M. Sauvage was reappointed Treasurer, and then M. Rabier for France, M. Pynaert for Belgium, Mr. Krelage for Holland, Mr. Clark for Great Britain, and Mr. Schetelig for Germany, offered congratulations to M. Vachoux for presiding, and to the Swiss horticulturists for hospitality and general arrangements.

This concluded the actual Conference, but there was another lunch to attend, this time at the Hotel de la Société de l'Arquebuse et de la Navigation, where hospitality was offered by the Swiss Horticultural Association under the Presidency of M. Peter. In the afternoon, a visit was paid to the Cantonal Horticultural School, where there was another reception and tea was provided. An unexpected excursion to the top of La Saleve, on the French border, followed the visit to the school; from this eminence a grand view was obtained of Geneva and its lake and part of the plain of Savoy.

On the following day, June 22, the delegates were taken to view the more interesting places in Geneva, and in the afternoon they left by boat for Montreux, where on June 23, many of those who remained paid a visit to the Rochers de Naye.

YORKSHIRE FLORAL FÊTE AND GALA.

Several of the great Floral Fetes, held in the Old City of York during the past thirty years, have been memorable for some special reason or feature—there was one the public never saw because a terrific gale demolished it. The three-day gala of 1927, however, will be kept in mind because its opening day—June 29—coincided with that rare celestial phenomenon, an eclipse of the sun, and with a great ecclesiastical function held to celebrate the thirteen hundredth anniversary of the stately old Minster that dominates the walled-in City. Thousands of visitors came to York for the Minster Celebration and the Gala, and many came so as to be in or near a position to see the eclipse; the latter were disappointed, as rain fell in the early hours of the morning, and after the rain, from six o'clock onwards, the sky was very overcast and glimpses of sunlight were obtained only at the end of the period of eclipse. So far as York was concerned, the eclipse as an attraction was badly staged.

The Gala was held at Knavesmire "without the City wall," and although the site is not so central as the old one at Bootham Park, it is more spacious, and as it belongs to the City there is always room for extension in this great open space should circumstances warrant it. The exhibition was a good one, the hardy flowers of early summer providing a feast of beauty and colour. Other good features were the ornamental groups of flowering and foliage plants, the rock and water gardens, Orchids and Roses. The non-competitive exhibits were numerous and beautiful, and particularly fine were the Sweet Peas arranged by Messrs. Sutton and Sons; Lord Leconfield's splendid collection of vegetables; Mr. Engelmann's and Messrs. Allwood's Carnations; Messrs. J. Peed and Son's Hydrangeas; Messrs. Backhouse's formal garden and flower-planted moat; Messrs. Kent and Brydon's water garden; Messrs. Toogood and Son's Gladioli; and Messrs. Blackmore and Langdon's Delphiniums and Begonias.

Although the sky was somewhat overclouded, there were occasional bright periods when the show was opened to the subscribers and ticket-holders on Wednesday morning, punctually at noon, and there was a fair attendance of the public. The President, Col. Sir Edward Brotherton, Bt., presided at the lunch given to the judges and principal exhibitors. We hope the attendance increased, as such a good show was worthy of a good gate, and a good gate is one of the greatest encouragements to a hard-working committee such as is now managing the York show under the Chairmanship of Mr. H. L. Swift, with Mr. G. Johnson as Chairman of the Floral Committee.

Orchids.

Orchids were a pleasing feature, and the competition was good in most of the classes. The arrangement of the exhibits, whereby each competitor groups all his exhibits together and has class cards to show which is which, makes judgment far more difficult than when all the plants in each class are shown side by side. Moreover, visitors must find it very difficult to determine which prizes are awarded and which are not, as a second prize may be the earliest to present itself when the tent is entered, and the first prize exhibit may be round the corner of a bench of tabling.

Messrs. J. Cypher and Sons obtained the premier award for a table of Orchids arranged on a space twelve feet by five feet; the arrangement was pleasing, and a few of the best plants were Thunia Marshalliae, T. Magoniana, the lovely Vanda teres, Miltonia Charlesworthii, and bright hybrid Odontoglossums and Odontiodas; J. McCartney, Esq. (gr. Mr. Potts), Hey House, Bolton, was awarded the second prize for a bright group of smaller plants, while Messrs. J. J. Keeling and Sons were placed third.

The same competitors occupied similar positions in the class for a dozen Orchids in bloom, the Cheltenham firm's principal specimens being Laelio-Cattleya Canhamiana, Thunia Marshalliae, Cypripedium Lawrenceanum, and the handsome C. St. Alban; Mr. McCartney's leading plants were Miltonia Charlesworthii, Cattleya Falco, Laelio-Cattleya Canhamiana and L.-C. Isabel Sander.

Mr. McCartney beat Messrs. J. Cypher and Sons for six Orchids, showing good examples of Cattleya gigas, with six flowers on a spike, C. Hesta, Laelio-Cattleya Epsilon, Miltonia Hyeana and Odontoglossum Cyrus; Messrs. Cypher's best plants were Laelio-Cattleya Wiganiana, Thunia Marshalliae, Cypripedium Rothschildianum and C. callosum Sanderae. For three Orchids, Mr. McCartney was again the most successful prize-winner, leading with finely-grown Odontoglossum Orosius, Cattleya gigas and C. Dupreana superba; Messrs. J. J. Keeling and Sons, were second, and Messrs. J. Cypher and Sons, third. The Messrs. Keeling led for one specimen Orchid with a capital example of Cypripedium Curtisii Sanderae, carrying ten flowers.

Mr. McCartney submitted the best six Orchids, and of these Miltonia Charlesworthii and Cattleya Mossiae were notably good. This was a class open only to amateurs, as were other classes, for three plants and one plant respectively, wherein Mr. McCartney carried off the premier awards, his three specimens consisting of a fine Anguloa Cliftonii, Laelio-Cattleya Canhamiana and Cypripedium Rothschildianum.

Groups.

Mr. W. Holmes and Mr. T. M. Petch were the only exhibitors in the class for a group of miscellaneous plants arranged on a space not exceeding three hundred square feet; each showed well, but Mr. Holmes had the brightest exhibit, and made an elegant and attractive group of Codiaeums, Liliums, Nandina domestica Francoas and a few Orchids.

Messrs. James Cypher and Sons secured the leading honours for a collection of plants arranged on a space sixteen feet by six feet, and the firm made a fine use, in their artistic effort, of bright Codiaeums, Liliums, bright Fuchsias, richly coloured Selaginellas, Clerodendron fallax and Haemanthus; Mr. W. Holmes was second. In the class for a smaller group, Mr. Holmes was the only exhibitor, and deservedly received the first prize.

Rock Gardens.

There was but one exhibitor in the class for a rock garden arranged on the ground, to be viewed all around and to occupy a space not exceeding thirty feet by fifteen feet. Mr. Samuel Pickering, Clifton, York, was awarded the first prize for a pleasing design wherein dwarf Piceas, Violas, Cheiranthus Allionii, Potentillas, and Sedums were the principal subjects. A plant of golden Privet, however dwarf, is, we consider out of place in a rock garden.

A space of thirty feet by twelve feet was allowed for a rock garden in which water might be introduced at the discretion of the exhibitor. The schedule specified that no digging would be permitted, but as each competitor had sinned in regard to this regulation—and could scarcely do otherwise when introducing water into the design—the judges overlooked the error and awarded first prize to Mr. S. Pickering, Clifton, York, and second to Mr. S. Gardiner. The former had a very attractive arrangement and provided a pleasing background of Maples and Bamboos for his well-furnished rock garden and pools of Nymphaeas. First-rate features were the colonies of Sedums and Sempervivums and the little moist valley with its drifts of Mimulus. By comparison, Mr. Gardiner's exhibit lacked brightness, and gave evidence of too severe a restraint in planting.

Hardy Flowers.

The hardy flowers were a great success, and there were four excellent groups in the competition for a collection of hardy perennials, including Liliums and other hardy bulbous plants, or cut flowers, or both, Roses excluded. A space not exceeding 350 square feet was allowed, so readers may imagine the fine effect the four exhibits provided.

Messrs. Bees, Ltd., secured first prize with a splendid arrangement of flowers of high quality, in which the raised group of Delphiniums was magnificent, the large-flowered deep mauve variety named Hawarden Castle, and the deep purple blue Jenny Jones, being especially fine. The Paeonies, Kniphofias, Lilium croceum, Spanish and English Irises, Oriental and Iceland Poppies, Campanula Donald Thurston, Lupins, Pyrethrums, Gaillardias, Scarlet Sweet Williams and select forms of Chrysanthemum maximum were combined in a delightfully natural and pleasing manner, and the firm was awarded eighty-nine out of a possible hundred marks.

Messrs. Harkness and Son secured the second prize with a display that contained magnificent Oriental Poppies in great variety, good Lupins and Linaria dalmatica, but their flowers were a trifle crowded, and the Delphiniums somewhat weak. Third prize went to Messrs. G. Longster and Son, Melton, for a pleasantly blended display of flowers of fair quality, their Foxgloves and Verbascum Longsteri being outstanding features; the last named is a very elegant plant, unusually graceful for a Verbascum, and carrying pale yellow flowers. Fourth prize was awarded to Messrs. G. Gibson and Co., Bedale.

Messrs. Bees, Ltd., were equally successful for a collection of hardy flowers arranged on a space eighteen feet by seven feet, winning with a handsome group in which Delphiniums were again of exceptional excellence, while Paeonies were also very fine; Messrs. G. Gibson and Co., second; Mr. S. Gardiner, third, and Messrs. Harkness and Sons fourth. Messrs. Bees, Ltd., also contributed the best set of twenty-four bunches of hardy flowers, their principal subjects in this class being Paeonies, Delphiniums and Lupins.

Mrs. Millington, Burton Lane, York, showed the best set of a dozen bunches of hardy flowers, having, among other good things, Erigeron B. Ladhams, Spiraea Aruncus and Spanish Irises; Messrs. H. Jubb, Westfield House, Sykehouse, Goole, obtained the second prize in this good class.

The groups of Lupins were excellent, but the competitors should be placed on an equal footing by being compelled to arrange the flowers on the ground level, staging and boxes being disallowed. The finest spikes were shown by Messrs. J. D. Hutchinson, Kirbymoorside, whose exhibit was of first-rate quality, and by reason of elevated planks he was able to obtain some advantage in effect over Messrs. Harkness and Son and Messrs. G. Gibson and Co., who came second and third respectively and arranged their exhibits in a very natural manner on the ground.

Roses.

There have been occasions when climatic conditions rendered it almost impossible to show Roses at York; there have been others when the Roses at York have been among the best of the season. This year the Roses were plentiful, and the competition good, but in many instances the fine blooms had suffered from the effects of rain and wind.

Messrs. Jarman and Co., Chard, showed the best of four sets of seventy-two blooms in not fewer than three dozen varieties. Their collection included good specimens of The Queen Alexandra, Mrs. H. Bowles, H. V. Machin, and Souv. de H. Beckwith; second Mr. Elisha J. Hicks; third, Mr. H. Drew; fourth, Mr. G. Burch. Mr. Hicks led for four dozen blooms in not fewer than twenty-four varieties, and showed capital flowers of Golden Emblem, Red Star, Rising Sun, and George Dickson; second, Messrs. Jarman & Co.; third, Mr. H. Drew.

Messrs. Jarman and Co. gained first prize for thirty-six Roses, and their examples of Mr. H. Bowles, Lt. Chaure, and Golden Emblem were in fine form; second, Mr. Elisha Hicks; third, Mr. H. Drew. Mr. George Prince secured the first prize for twenty-four Rose blooms, and in his set we noticed beautiful flowers of Duchess of Marlborough, Mrs. Courtney Page and Col. Oswald Fitzgerald; second, Mr. E. Hicks. The last named came to the front for eighteen blooms, and showed George Dickson and Chas. E. Shea in fine condition; second, Mr. George Prince; third, Mr. H. Drew.

Other successful competitors were Mr. G. W. Reader, Naburn Ferry, York, who won two first prizes; and Mr. W. Hutchinson.

Floral Designs.

The classes for floral arrangements are invariably well filled with clever and beautiful designs at York, and on this occasion there was no falling off, either in quantity or quality.

Messrs. Arlington, Jameson Street, Hull, were particularly successful exhibitors in this section, and under this title they are new competitors. Our readers will, however, understand the reason of this success when we state that "Arlington" is but a pseudonym for Mr. Montague Stather.

This firm led for a hand basket of cut flowers with a gorgeous arrangement of brilliant Odontoglossums and Odontiodas, and were followed in order of mention by Mr. S. Warren and Messrs. Hewitt and Co. "Arlington" was also written on the first prize card in the class for a hand basket of flowers, Orchids excluded, where the design was a handsome one in golden Arum Lilies and the deep steely blue Eryngiums; Messrs. Hewitt and Co. gained the second prize with a pretty design in mauve Sweet Peas and yellow Roses. For a group of flowers suitable for a dining table decoration Messrs. Arlington led once more, and this time used various Orchids and spikes of Statice Suworowii.

Using white Odontoglossums, white Lilies and Stephanotis, Messrs. Arlington secured the premier prize for a bride's bouquet, charmingly arranged; second, Messrs. Backhouse, with Cattleyas and Odontoglossums; third, Messrs. Padgett and Watson, with white Odontoglossums, Carnations and Gladioli. For a bridesmaid's bouquet Messrs. Arlington again held the winning card with an arrangement of mauve Sweet Peas and mauve and purple Cattleyas; second, Mr. G. Warren; third, Messrs. Backhouse.

The best pair of bouquets were those from Messrs. Arlington, who had one of yellow and pink Carnations and one of white Carnations, Stephanotis and tiny sprays of double Gypsophila; second, Messrs. Padgett and Watson; third, Messrs. Hewitt and Co. Once more the Arlington designs led, and this time in the class for one bouquet, where they submitted one of their best efforts, a lovely arrangement of Madame Butterfly Roses and natural Rose foliage; Messrs. Backhouse won the second prize, and Mr. F. H. Ward the third prize.

Messrs. Backhouse excelled for a bowl of Roses, using Golden Ophelia; Messrs. Arlington second, and Mr. S. Warren, third. Mr. Ward led for a bowl of flowers with a handsome arrangement of large crimson and pink Carnations, Messrs. Padgett and Watson coming second with brilliant Clarkias, and Messrs. Arlington, third, with mauve Scabious.

Vegetables.

Lord Leconfield (gr Mr. Streeter), Petworth Park, Sussex, contributed one of the finest—in many ways the very best—exhibits in the show. It consisted of about two hundred dishes of splendidly grown vegetables, representing a wonderful variety of produce for this time of year. The general arrangement was excellent, and the display was greatly admired.

In the few classes provided for vegetables, Mr. Streeter was the leading prize-winner.

Awards of Merit.

Delphinium Mrs. Paul Nelke.—Flowers of medium size and a lovely sky-blue shade.

Delphinium Lady Edith.—Flowers of large size and good form; mauve.

Delphinium Lady Elizabeth.—A pleasing variety of mauve and blue colour.

Begonia Albatross.—A magnificent double-white variety represented by a superbly grown plant. The foregoing were shown by Messrs. Blackmore and Langdon.

Medal Awards.

Large Gold Medals.—To Messrs. Sutton and Sons, Lord Leconfield (gr. Mr. Streeter), Mr. C. Engelmann, Messrs. Backhouse, Messrs. Kent and Brydon, and Messrs. Allwood Bros.

Gold Medals.—To Messrs. J. Kelway and Son, to Messrs. Toogood and Sons, to Messrs. W. Hewitt and Sons, and to Messrs. J. Peed and Son.

Silver-Gilt Medals.—To Mr. W. Wells, Junr., to Messrs. R. H. Bath, to Messrs. Backhouse, to Messrs. Winn Bros, and to Messrs. Blackmore and Langdon.

Silver Medals.—To Mr. E. Clegg, to Mr. H. Ellison, to Messrs. Jarman and Co., to Mr. A. Todd, to Messrs. W. Simpson and Sons, to Mr. P. Rogers, to Mr. Gardiner, to Messrs. Maxwell and Beale, to Messrs. Bowles and Skarratt, to Messrs. Bakers, to Messrs. Wilson and Agate, to Messrs. Storrie and Storrie, to Mr. M. Prichard, to Messrs. Unwin and Son, and to Messrs. Lowe and Gibson.

READING AND DISTRICT GARDENERS.'

The first meeting of the summer session was held by the kind permission of Mr. Lawrence Currie, at Minley Manor, Farnborough, on Monday evening, June 13. The outing was favoured with fine weather, and nearly one hundred members were present. The party was received by Mr. Harold Wright, the gardener, and under his guidance and several members of his staff, an inspection was made of the gardens and grounds. Minley Manor is noted for its extensive ornamental grounds, and the ramble through these was much enjoyed. Magnificent views are obtained from the hill near the church across Laffen Plain to Aldershot. The outing was greatly enjoyed.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

The members of the Glasgow and West of Scotland Horticultural Society, to the number of one hundred, had an outing in Ayrshire on Saturday. Proceeding by motor, they first visited Ayr, where luncheon was served, and afterwards journeyed to Ballochmyle House to inspect the gardens. On the way home a halt was made at Barskimming, the residence of Mr. Dunlop, and under the guidance of Mr. Currie, gardener, the company inspected the spacious grounds and gardens. Rhododendrons were in full bloom and made a lovely show, but the chief attraction was the long stretch of herbaceous borders. Tea was afterwards served in two marquees on the lawn, and before departing Mr. Thomas Dagg, Chairman of Directors, expressed on behalf of the Society, their appreciation of Mr. and Mrs. Dunlop's kind hospitality.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on the 7th ult., Mr. W. J. Thomson, President, in the chair.

Reference was made to the loss the Society had sustained by the death of Mr. David King, one of the Vice-Presidents, who for two years was President of the Society, and for a number of years a member of the Council.

A lecture, illustrated by lantern illustrations, was delivered by Sir Everard Imthurn, K.C.M.G., K.B.E., on "Palms in the Tropics," in which he had spent thirty years—twenty in Guiana and ten in Ceylon and the South Sea Islands. He stated there were no fewer than seventy species of Palms, represented by twenty-one genera, native to Guiana, of which two or at the most, three only, had fan-shaped leaves. Perhaps no country of equal size was so rich in Palms. Neither in Ceylon nor in the South Sea Islands was there such a wealth of species. The Cocos Nut Palm, however, was now the most widely distributed of all.

The exhibits were: Tulips, from Messrs. Dobbie and Co., Edinburgh, awarded a Silver Medal; Cauliflowers, from Mr. J. W. Scarlett, Inveresk, Award of Merit; Primulas from Mr. Cload, Kinmount Gardens, Annan, Dumfriesshire, awarded a Cultural Certificate.

WADHURST ROSE AND SWEET PEA SHOW.

The second annual Rose and Sweet Pea show of the Wadhurst Gardening Association was held on June 22. Started last year in the Memorial Hall, the exhibits this year filled in addition a large marquee. The increase in quality was as marked as the increase in quantity, and won congratulatory comments from the judges. The Courthope Perpetual Challenge Cup for Roses was won by Mrs. A. V. Drummond, Bassetts, Mark Cross; the Sharp Perpetual Challenge Cup for Sweet Peas, by Mrs. Wellington Williams, Shernfold Park, Frant; the National Viola and Pansy Society's Bronze Medal, by Captain and Mrs. Norman Snelgrove, Marling Place, Wadhurst; and the Certificate of Merit by Mrs. R. Sharp, of Woodhill, Mayfield. The *Gardening Illustrated* Medal, offered to the winner of the highest number of points, was won by Mrs. Drummond. Other prize winners were Mrs. L. K. Jones, F. W. Franks, Esq., Tonbridge, G. H. Shakerley Akers, Esq., Doddleswell Manor, near Uckfield, Sir Austin Chamberlain, K.G., M.P., John L. Reid, Esq., Maplesden, Ticehurst, and Sir Derrick Watson, Burwood, Groombridge. The Hon. Secretary, Miss Moutray Read, exhibited a fine plant of Primula Florindae in a non-competitive class, which was Highly Commended. The syringe presented by Messrs. Abol for the most popular exhibit was won by Captain and Mrs. Norman Snelgrove for a collection of hardy flowers.

Obituary.

George Mair.—The death took place on Thursday (23rd ult.) of Mr. George Mair, nurseryman, Prestwick, whose name is prominently associated with the work of raising Gladioli. Born in the little Aberdeenshire village of Fyvie, in 1841, he received his early training in his native county, and afterwards gained additional experience at Lanfine, and Kirkmichael House, in Ayrshire. Something like forty-six years ago, he acquired a small nursery with a single glass house at Prestwick, and about 1893 he resolved to specialise in Gladioli. It was an uphill struggle at first, but success ultimately attended his efforts, and now 10,000 seedlings are raised annually, and Mr. Mair's varieties are distributed all over the world. As an exhibitor, Mr. Mair possessed a wonderful record. For nearly forty years he staged Gladioli at the shows of the Glasgow and West of Scotland Horticultural Society, and during that long period he only failed on one occasion to secure the first prize award. Despite his business activities, the deceased gentleman devoted much of his spare time to public affairs. For a number of years he served as a member of the Town Council, Parochial Board and Parish Council, and besides being a Justice of the Peace he was the senior elder of Monkton and Prestwick Parish Church. As the business progressed, additional land was acquired at Glenburn, where a feature was made of Hydrangeas, Pelargoniums and Sweet Peas, and although three sons were associated with him in the management, Mr. Mair continued to take an active part in the business until laid aside by illness.

TRADE NOTE.

Any of our readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Rayner & Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle*.

ANSWERS TO CORRESPONDENTS.

Fasciated Marigold.—*G. B.* It is not uncommon to find specimens such as the one you enclose. The condition is sometimes known as "Hen and Chickens," and is fairly common in Composites, Hen and Chickens Daisies being a good example.

Gooseberry Leaves Spotted.—*J. B.* The spots on your Gooseberry leaves are those of a fungous pest known as Cluster-cups, or Puccinia pringsheimiana. No remedy has as yet been found for it, and all affected leaves and fruit should be gathered and carefully burnt.

Grapes Spotted.—*O. B. B.* The berries are affected with spot disease caused by the fungus Gloeosporium ampelophagum. Spray with liver of sulphur at a strength of half-an-ounce in two gallons of water, or dust flowers of sulphur on the leaves and bunches, and again at an interval of ten days. Next winter, when the vines are dormant, spray the rods with iron sulphate in solution.

Hydrangeas.—*A. F. J.* The blue colour in Hydrangeas is not natural, but is produced by introducing sulphate of iron into the soil. Where the soil is quite free from iron, Hydrangea flowers are naturally of a pink or red colour. Presumably up to the present you have been watering the soil with some preparation to produce the blue colour, and if you discontinue doing this the flowers will gradually return to pink or red.

Melons Diseased.—*E. L.* The disease attacking your Melons is a fungus, Stemphylium cucurbitacearum. Very little is known about it, but seeds which have germinated slowly are more liable to infection than those of more rapid growth. The seedlings and soil should be burned. —*M. L.* The Melon plant submitted for examination is suffering from Fusarium wilt. The fungus was present in the bed and after entering the root it grew slowly up the stem in the wood vessels turning them a brown colour and causing the leaves to wilt. You should pull up infected plants so soon as they appear and burn them. Prevention of this disease in the future will depend upon the use of disease-free soil and manure. The house should be thoroughly cleansed in the winter and washed down with emulsified cresylic acid. If you are growing the Melons in beds placed directly on the floor of the house it will be necessary either to steam or to treat with formaldehyde the soil upon which the beds are to be placed. When making up the new beds you should either use soil from a new source or sterilise your present supply by steam or by formaldehyde.

Mint Affected.—*B. J. B.* Your Mint is affected with Mint Rust (Puccinia menthae). You cannot cure the plants which are already affected, as the mycelium persists in the underground portions of the Mint as well as in the top growth. Your best plan will be to dig up and burn the plants next season, and make a fresh Mint bed on land as far as possible from the old one. Spraying the affected plants with a rose-red solution of permanganate of potash will serve to keep the fungus in check and destroy the spores.

Mossy, Slimy Growth in Lake.—*J. D. College.* One pound of sulphate of copper to 100,000 gallons of water should be used in ponds or lakes that contain fish. The weed of which you complain is most likely one or more of the species of fresh water Vaucheria, which grows very rapidly in still water, whether in lakes, ditches or in wells fed by spring water. The number of fine filaments is often so great that it would take a fair amount of the sulphate to kill them, though in the above proportions the experiment has been favourably commented upon. Ponds that contain much mud in the bottom are favourable to this Algae, which reproduces itself in a variety of ways, and send spores and zoospores into the water in enormous numbers. In some cases ponds have been run dry and the mud cleared out with highly beneficial effect. In other cases some sort of drag has been attached to the end of a boat for clearing off the thick masses of the weed, and this is worth trying two or three times a season. Swans, geese and other water birds devour a great deal of this and other water weeds.

Names of Plants.—*G. S.* 1, Sedum album variety; 2, Mesembryanthemum amoenum; 3, Lysimachia vulgaris; 4, Juniperus chinensis. *Constant Reader.* 1, Myosotis species; specimen too scrappy to identify; 2, Lychnis chalcedonica; 3, Geranium phaeum; 4, Allium Moly; 5, Veronica species; specimen, too scrappy; 6, Deutzia scabra; 7, Salvia Horminum. *A. J. D.* Rhododendron ferrugineum (the alpine Rose).

Nectarines Splitting.—*S. G.* As you are sure your Nectarine trees have not suffered either from lack of lime in the soil or for want of water at the roots, we are inclined to think the cracking and rusty appearance of the fruits has been caused by an excess of atmospheric moisture. Peaches and Nectarines love moisture, but too much atmospheric moisture in cold houses is a mistake. Do not syringe with cold water when the sun is powerful, or so late in the afternoon that the fruits and foliage would not become dry before night. It is possible that thrips have contributed to the cracking and rusty appearance of the fruits, although we failed to detect any on those sent.

Onion Bulbs Attacked.—*H. R. S. W.* Your Onion bulb is attacked by the "White-rot" disease caused by a fungus Sclerotium cepivorum. Onions should not be grown in infected soil for eight or ten years and, during that period, the soil should be well cultivated, care being taken not to transfer contamination to clean Onion beds. The diseased plants should be taken up immediately and burned. It is a good plan to remove the entire bed, soil and all, which should be burned by spreading it over a heap of burning rubbish. No variety of Onion is known to be immune. Shallots are resistant and Leeks are rarely infected.

Peach Leaf Curl.—*S. J.* The disease cannot be cured, but it may be prevented another year by spraying in early spring, say, in February, before the buds swell, with either Bordeaux or Burgundy mixture. The following double strength Burgundy mixture has given good results:—Copper sulphate, 2½lbs.; carbonate of soda (crystals), 2¼ lbs.; water, twelve gallons.

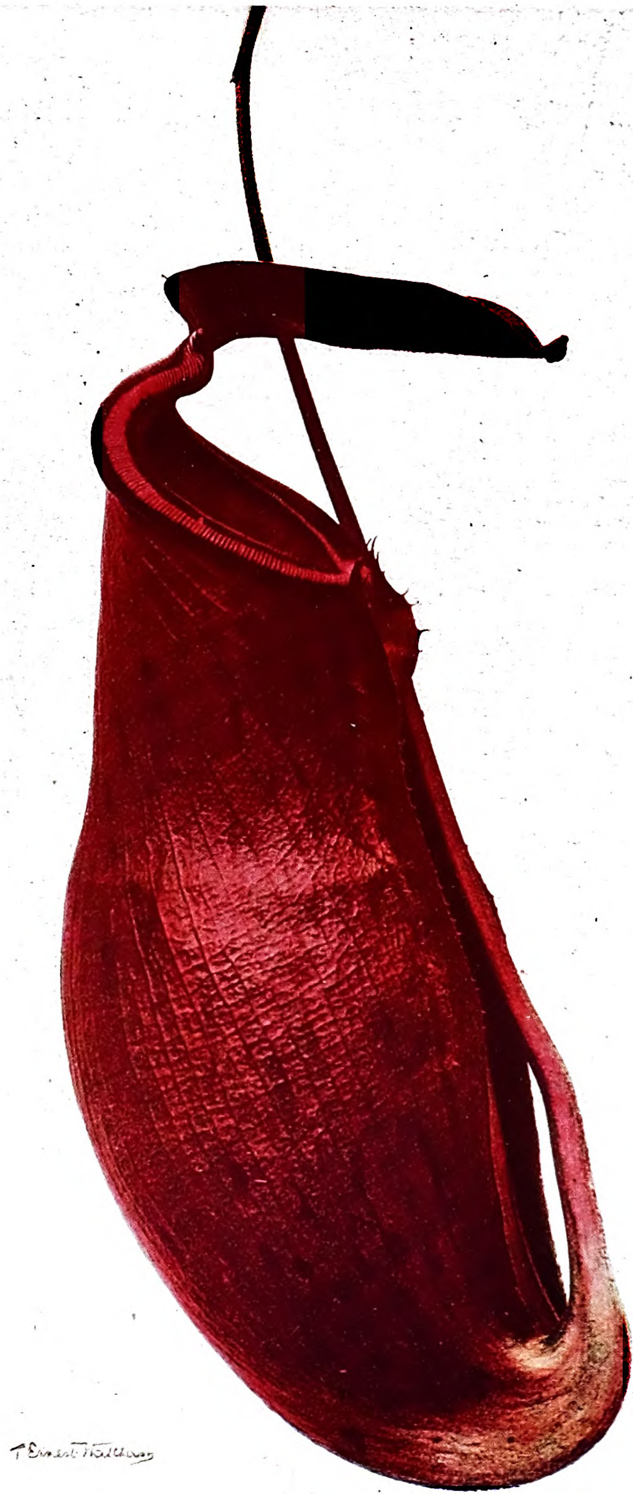
Prolification in Cherry.—*A. S. and S.* The abnormality in your sprig of Cherry is known as prolification, and is caused by the growing point continuing to develop beyond the flower, instead of ending in the flower as in mormal cases. The condition, though abnormal, is not uncommon, and is fairly frequently met with in Roses.

Vine Leaves with Warty Growths.—*B. H. C.* The very small swellings on the lower surface of the leaves are intumescences, which are produced naturally by the vine when under rather damp conditions. The trouble is not Black Rot. The swellings are green at first and later turn brown. Maintain a drier atmosphere and ventilate more treely.

Tulip Bulbs.—*J. S. T.* Your Tulip bulbs are attacked by Botrytis. The spores of this fungus are air borne and may be carried to healthy plants from neighbouring diseased ones. Quite frequently, however, the bulbs themselves are infected before planting. Small, black sclerotia may be observed among the outer scales of the bulb. The bulbs should be well dried and the infected scales removed before planting.

Communications Received.—A. R., Bermondsey. —J. A. B.—E. R. A. Y.—E. B.—E. J. M.—P U P.—R. R. G.—B. and R.—D. H.—F. V. N.—W. F.—S. B.—J. F.—G. S. H.—W. L.—R. T.

Supplement to The GARDENERS' CHRONICLE July 9'21


T Ernest Waltham

NEPENTHES MASTERSIANA

THE
Gardeners' Chronicle
No. 2115.—SATURDAY, JULY 9, 1927.

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COLOURED SUPPLEMENT PLATE.
Nepenthes Mastersiana.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63·1°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 6, 10 a.m. Bar. 30·0. Temp. 66°. Weather, Fine.

Botanical and Horticultural Adventure and Romance—II.

THAT exploration of any sort is a high adventure, nobody will deny. The lure of the unknown is irresistible, and at its call men go forth to seek their fortunes with a careless rapture. But the height of adventure is reached in the exploration which involves travel "off the map." There is ample geographical work (in the restricted sense) still to be done, but something more is expected of the modern traveller than to be able to travel and construct a map; he must needs discover something more than new rivers and mountains if he would make his mark. For the truth is, the relative positions of pioneer and scientist are now reversed. Formerly the pioneer dabbled in botany, or zoology, or geology, annexing with myopic eye such specimens (often lacking in essential parts) as came within his purview. To-day, botanist, zoologist and geologist have turned explorer, and, still breaking new ground, they not only collect with discrimination specimens of the fauna and flora, but solve fundamental problems of their architecture, or reconstruct their past histories. Of all professional explorers, perhaps the life of the plant-hunter is the most exacting and the most interesting. His very work keeps him in the field much longer than is required by most investigations, and botanical and geographical exploration usefully supplement each other. It is impossible to say what special qualities or training the future plant-hunter requires; perhaps he requires none, other than a sound constitution, a love of flowers, and an iron determination to be an explorer and nothing else. Between 1840 and 1900, Messrs. James Veitch and Sons employed twenty-two collectors, men of diverse character and upbringing; nor does this list include those two outstanding and romantic figures, Douglas and Fortune. Most of these men were successful, and probably the only qualities they had in common were keenness and adaptability. The power of adaptation to circumstances, however uncomfortable, really depends entirely upon a personal sense of values. No reasonable man willingly mortifies himself under the mistaken belief that he is taking a cure; but discomfort and danger in greater or less degree are the common lot of the plant-hunter. If he believes that the only thing that really matters is to deliver the goods and solve such problems as he has set himself to solve, then he will regard this as all in the day's work, and not bother himself. If, on the other hand, he believes that his personal comfort has a first call on the investment, then—although we hold strongly that he should look after himself as thoroughly as circumstances permit—the work must suffer. The dearest asset the plant-hunter can possess is a sound constitution, for he will try it hard; without it he cannot hope to withstand climatic and other difficulties. As for knowledge, the world is his university, but the most valuable is a knowledge of his job, and that, perhaps, can only be learnt in the field. It is easy for the uninstructed to say that anyone can collect plants, because, as a matter of fact, most of us do. But the collector, unless he understands his business, will infallibly collect the wrong ones. That it sounds easy is a tribute to its difficulty, for it is the hall-mark of efficiency that everything works as smoothly as if it were running on oiled bearings, and efficiency is not attained without long practice. Not until things go awry does the master of craft reveal himself, and economy of effort is the prelude to success. But the romance of botany is not primarily the romance of the plant hunter. To him, indeed, is the adventurous life; but the most fecund achievements are those connected with the founding of the great plantation industries—the Rubber industry of Malaya, the Tea plantations of India, the Cinchona estates of Java and Ceylon, and many more, all sprung from the vision and enterprise of a few great men. And this cultivation of valuable tropical trees is in its infancy. From the earliest times men have carried their food crops with them from one region to another, till now the staple foods of the world are universally distributed, and none knows whence they first started on their travels. Maize, Rice, Wheat, the Banana, the Coconut and other food plants now girdle the earth. They are geographical factors of deep importance, and their present broadcast distribution has a profound effect on the history of mankind. But the scientific cultivation of plants yielding drugs, oils, gums, soaps, fibres, and a hundred other valuable economic products on a commercial scale is a modern development, and one which opens up immense possibilities. Here, indeed, is a limitless field for adventure and discovery. The establishment of plantations is but the first step; nay, it is not even that, for it is first necessary to find the plant, and convince men that it will contribute something to their happiness and comfort, either for utilitarian or aesthetic ends. The plant may be rare, or in danger of extermination, or an entirely new discovery, or possessed of some quality which renders its introduction into a certain district desirable. There are a dozen angles from which we may look at an economic plant, in order to harness it most usefully to our needs. As for the possibilities of new plants, or of new uses for old plants, they appear to be endless, and there are vast problems ahead for the explorer, the research worker, the planter, the merchant, and all the liaison services connected with big industry. Suppose, then, that we have established our plantation. For a time all goes well, there is no hint of the coming struggle. But if we look at the matter squarely, we shall see that there must come a tussle, and that the fight will be a continuous one, since Nature never stands still. She is for ever forging new weapons, not especially for man's discomfiture, but for her own advantage. From man's point of view, a certain amount of useless jungle has been cleared to make room for plantations of useful trees. But Nature looks at the matter differently. For thousands of years she has been nicely holding the balance between a number of forces; sometimes one makes headway, sometimes another, but the balance is soon restored automatically, and on the whole a position of equilibrium is maintained. Now comes man and rudely upsets everything again. Incalculable elements have been introduced, and the result cannot be foreseen, though we may be sure Nature will take the shortest cut to re-establish equilibrium. What has happened is that a new and untried host has been introduced, and after a lull, during which potential enemies are making a reconnaissance in force, the struggle breaks out with renewed fury. Birds and animals, plants and insects, and those organisms which are below the border line of differentiation, advance to the attack, or to ally themselves with the newcomer in defence. An old and discredited foe emerges from ambush, new enemies appear from outside, and in a very short time the struggle becomes general; unless, therefore, man, whose selective activity has precipitated a new conflict, organises an adequate defensive, he may bring a hornet's nest of trouble about his ears. In this way the Coffee plantations of Ceylon were ruined. The West Indian Banana crop is to-day threatened with extermination, and the American Cotton crop suffers frightfully from the Boll Weevil. In this country we have Silver-leaf trouble, Gooseberry Mildew, Potato blight, and other serious epidemic diseases, which are only kept in check by the most drastic action and unremitting watchfulness. Even so, the losses are serious. Besides the perpetual defensive-offensive warfare waged against plant enemies, there is also the constructive side of agricultural botany. This includes the breeding of Wheats which will give a bigger yield per acre, or ripen earlier in the year, or carry a heavier straw, or resist Rust disease; the selection and crossing of sound stocks for fruit trees; the combination of desirable qualities, at present found in two species, in one, and the elimination of undesirable qualities. This is the specialist's work, but it must be remembered that the material on which he works is often the result of some collector's discovery, perhaps a chance specimen from a remote corner of the world; and that he does deliberately and according to formula what the native has perhaps done empirically for centuries. In this way the great plantation industries which give work to thousands at home and abroad, have been built up. When we look at the Orange groves of South Africa, the Vineyards of Australia, and the fruit farms of Canada, we begin to perceive the potentialities of exploration—and therein lies the future Romance of Botany and Horticulture.

Our Coloured Plate.—The Coloured Supplement to the present issue presents an illustration of one pitcher of Nepenthes Mastersiana. Although Nepenthes are not grown so frequently in private collections as formerly, they still constitute one of the great attractions at Botanic Gardens, and wherever they are cultivated the handsome N. Mastersiana is always to be found, as it is easily managed, and a specimen of fair size makes an attractive display when the new pitchers have fully grown and developed their rich crimson colouring. N. Mastersiana is the result of crossing N. sanguinea with N. khasiana, by Messrs. J. Veitch and Sons, and when the hybrid was exhibited in 1882, the Royal Horticultural Society awarded it a First Class Certificate. Nepenthes Mastersiana was named in compliment to the late Dr. Maxwell T. Masters, for many years editor of *The Gardeners' Chronicle.*

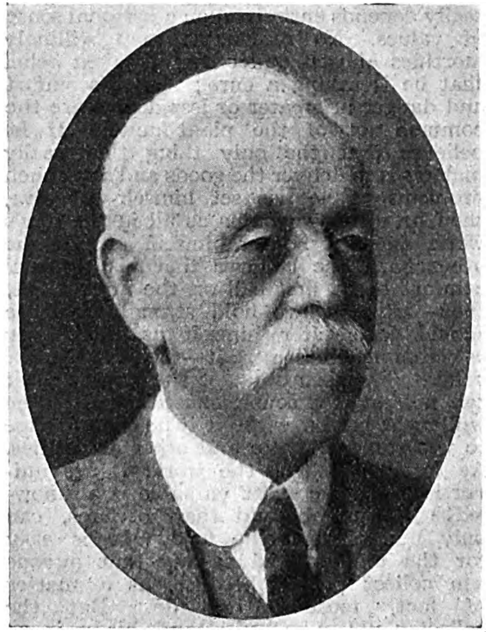
The Fruit Crops.—Will correspondents who have kindly furnished us in the past with reports on the fruit crops notify the Editors of any change of address. We shall be pleased to send a form to any reader specially interested in fruit-growing; application should be made to the Editorial Department.

The Beauties of the Thames Valley.—The Council for the Preservation of Rural England has convened a Conference for July 7. This will be held in the Shire Hall, Reading, when lord-lieutenants, representatives of local authorities, landowners and others will consider how best to preserve the natural beauties of the Thames Valley from Oxford to Windsor. This is the first big Conference of its kind, and as a result, the formation of a special committee is anticipated to watch all proposals that might spoil the amenities and beauties of the River Thames.

Presentation to Mr. Charles F. Harding.—For thirty years, Mr. Charles F. Harding has been a member of the Committee of the United Horticultural Benefit and Provident Society, and during that long period he has rendered splendid service in connection with the rules and regulations of both State and Private Sections. As a mark of their appreciation and in acknowledgment of these services, the members of the Society have presented Mr. Harding with an oak writing table, and Mrs. Harding with a leather hand-bag. The formal presentation was made by Mr. C. H. Curtis on July 4, when the officers and members of Committee and a few personal friends entertained Mr. and Mrs. Harding to dinner at the Windsor Castle Hotel, Westminster. Mr. Harding is an old Chiswick student, and is now engaged in market gardening at Shiplake, Oxon.

Flowers in Season.—From Messrs. Allwood Bros., Wivelsfield Nurseries, Haywards Heath, we have received a selection of Carnations in which the firm specialises, and to whom we are indebted for new races, including the floriferous Dianthus Allwoodii and hybrids from such alpine species as D. deltoides and D. alpinus crossed with Dianthus Allwoodii. These last are very floriferous, for they have a perpetual flowering habit, and are useful for planting on rockeries, walls, terraces, etc. Six of these Allwoodii alpinus varieties, as they are termed, were included, viz., Puck, white with a maroon eye; Ariel, blush mauve, with lacing of deeper colour in the centre; Titania, deep maroon; Oberon, pale cerise with a maroon centre; Tinkerbell, pale pink; and Wendy, violet-purple. Three new Dianthus Allwoodii were sent in; Sylvia, salmon-pink with deeper lacing of the same colour; Pat, bright pink; and Phoebe, a variety with fragrant salmon blooms. Many border Carnations and perpetual border varieties were outstandingly beautiful, amongst them Rosalind, pale yellow flecked with red; Supreme, flesh pink; Skirmisher, yellow flushed with mauve and flaked with pink; Centurion, yellow ground with scarlet markings; and Douglasdale, light orange-vermilion. Of their new perpetual-flowering varieties they included Wivelsfield Copper, an unique shade of coppery-bronze; Velvet, maroon and crimson on a light fawn ground; Butterfly, white ground with crimson markings; and Splendour, vermilion, a very fine novelty.

Mr. J. Duncan Pearson.—The youngest of three well-known brothers, Mr. J. Duncan Pearson has been connected with the seed and bulb business for more than forty years, and during that time has made a hobby of growing and raising Daffodils. When he joined his brothers in the firm of Messrs. J. R. Pearson and Sons, no bulbs were grown at Nottingham, but having caught the Daffodil fever when still young, he gradually worked up a small collection, and went the length of spending some £60 of his hard-earned savings in getting a collection of his own. With this little collection he made a start in cross-fertilising and raising seedlings. Not very much success attended these first efforts, as the stock was small and contained nothing but obvularis, poeticus ornatus, Henry Irving and such like things, but when the firm moved from Chilwell to Lowdham, a better soil encouraged him to go in for some of the newer varieties and work upon them for further improvements. He remembers his brother coming back from Holland and saying he had bought Madame de Graaff at £5 per bulb, and Glory of Leiden at £4; later an offset of Weardale Perfection was acquired for £12, which was then considered a very high price to give for a single bulb. In later years, however, Mr. Pearson frequently paid so much as £30 to £50 for a really good thing. Perhaps his greatest early success was a cross between Madame de Graaff and Minnie Hume, which gave a large number of Giant Leedsii forms, which were at that time very few in number. Some of these, such as Lowdham Beauty, Hon. Mrs. Franklin, Norah Pearson, etc., have now become quite popular; and as they all increase quickly, the stocks have—in spite of sales—run from odd bulbs into many thousands. Another cross, Emperor × Madame de Graaff, which gave Florence Pearson, a pale, bicolor trumpet, is now grown almost everywhere where Daffodils flourish, including New Zealand. Only five seeds resulted from this cross, so it was very good luck to get even one good variety from it. Mr. J. D. Pearson is one of the oldest members on the R.H.S. Daffodil Committee, and he was on familiar terms with Peter Barr, F. W. Burbidge, Ernest Crossfield, Robert Sydenham, Rev. Bourne, Rev. J. Jacob, Walter Ware, and J. Kingsmill. Mr. Pearson has almost given up the fascinating pursuit of hybridising which is now done mostly by his nephew, who is full of youth and vigour. He believes the Daffodil will never lose its favour with the public and will always have real enthusiasts to look after its welfare in every way.



MR. J. DUNCAN PEARSON.

New Rose Garden for Brooklyn.—The Brooklyn, New York, Botanic Garden has received the munificent gift of $10,000 from Mr. Walter C. Cranford, for the purpose of forming a Rose Garden, a project which Rose lovers in New York, and especially the members of the American Rose Society, have long desired to accomplish. The plans have already been worked out by the consulting landscape architect of the garden; the garden is to be approximately 500 feet by 100 feet, and will contain a collection of Roses of all the most important types in as many species as possible. The wide interest taken in the garden makes it certain that generous donations of plants will be forthcoming, and it is hoped that many varieties will be planted before the close of the present season.

Chicago's New Flower Market.—On Thursday, June 16, the new wholesale cut flower market in West Randolph Street, Chicago, was officially inspected, over one thousand visitors going over the building. Great admiration was expressed at the concrete floors, the large windows providing abundance of ventilation, the light grey stucco walls and columns, and the automatic lifts to all floors. Paeonies were chiefly in evidence among the flowers on sale, Roses and Carnations being also in wonderful abundance for the time of year. On the roof of the building is an extensive conservatory, where decorative plants can be housed.

American Iris Society's Meeting.—The eighth annual meeting and outing of the American Iris Society took place on June 3, over a hundred members and guests taking part. Mr. J. C. Wister, the President, occupied the chair at the meeting, which was held in the Laboratory of the Brooklyn Botanical Garden. Some interesting discussions took place on subjects of interest to Iris growers, and after lunch the members visited the Iris garden of Mr. Robert Wayman, at Bayside, and that of Mr. A. A. Havemeyer, at Brookville. A remarkable fact is that in the United States, whereas amateurs are very enthusiastic growers of Irises, nurserymen are slow to take up these flowers, and do not consider them profitable, so that the trade is largely in the hands of a few specialists, some of them more or less amateurs themselves.

R.H.S. Gardens Club.—The annual meeting of the R.H.S. Gardens Club will take place at Burford, Dorking, by the kind permission of Sir William Lawrence, Bart., at 2.30 p.m., on Saturday, July 16. Sir William and Lady Lawrence have very kindly invited members of the Club to tea. There are electric trains from Waterloo at five and twenty-five minutes past each hour to Box Hill Station, which is close to Burford. Members proceeding from Wisley will visit the nurseries of Messrs. V. N. Gauntlett, Ltd., at Chiddingfold, during the morning. A motor-coach will leave Wisley at 9.15 a.m. sharp. There are a few seats available at 6/–, which should be booked without delay. Lunch will be taken at Guildford, members making their own arrangements. Members of the Club are asked to inform the Hon. Secretary, Mr. W. Cartwright, R.H.S. Gardens, Wisley, Ripley, Surrey, of their intention to attend the meeting at Burford.

Sweet Pea Show in Brussels.—The recent Sweet Pea show held in Brussels was a great success, and reflected the greatest credit on the Society ("Les Amis du Pois de Senteur") responsible for the arrangements. It was held in the Orangery of the Botanic Garden, but this venue proved to be too small for the larger numbers of excellent exhibits sent. The President of the Society is M. Firmin Lambeau, a personality too well-known in Belgian and other horticultural circles to require introduction, and certainly the Exhibition—only the fourth which this very young Society has held—must have caused him much gratification. One of the objects which the Society has set before it is to popularise the growing of Sweet Peas among school children, and that this end has been at least partially attained was shown by the fact that among the exhibits were those of twenty-seven scholars of the Forville school. Three foreign exhibitors were also present—Messrs. Dobbie and Co., of Edinburgh; M. Carlée, of Heemstede, Holland; and Mlle. Cushing, from near Fontainebleau, France. The Exhibition was opened on June 29 by M. Bauwens, the Inspector General of Agriculture, and on Sunday morning the Queen of the Belgians, whose love for flowers is well-known, visited the show, and was presented with beautiful bouquets of Sweet Peas by the two little daughters of M. Van de Weyer.

Forthcoming Dutch Flower Show.—On July 22, 23, and 24, an Exhibition of Roses, Sweet Peas and Carnations will be held in the Zoological Gardens at The Hague, Holland. Silver Cups and other valuable prizes will be awarded, and the show is expected to arouse much interest both among amateurs and professionals.

Women's Farm and Garden Association.—The annual meeting of the Women's Farm and Garden Association was held in a special tent at the National Rose Society's show in the Chelsea Gardens, on July 1, at 3 p.m. H.R.H. Princess Louise, Duchess of Argyll, presided. The speaker was Lieut. Col. Sir David Prain, C.M.G., C.I.E., M.A., M.B., LL.D., F.R.S., F.L.S., Superintendent of the Royal Botanic Gardens, Calcutta, and Director of the Botanical Survey of India until 1905, Director of the Royal Botanic Gardens, Kew, from 1905 until 1922. A satisfactory report on the year's work was read.

German Garden Architect for Turkish Capital. Otto Werner, a landscape gardener of Friedenau, Berlin, has been invited to go to Angora, the new capital of Turkey, to superintend the laying out of the very extensive public gardens in that town.

Retirement of a Glasgow Gardener.—We learn that Mr. Harry Reid, gardener at Ruchill Hospital, Glasgow, is retiring from the position he has held since the institution was opened in 1900. Mr. Reid was a director of the Glasgow and West of Scotland Horticultural Society for the long period of thirty-five years, and only gave up office at the last annual meeting.

Honours for Dutch Horticulturists.—The President of the French Republic has bestowed the rank of Officer of the Order of "Mérite Agricole" on Messrs. J. C. M. Mensing and C. Thim, the two Dutch growers who were chiefly responsible for staging at the recent Centenary Show in Paris the very beautiful Dutch groups, which aroused the greatest admiration of all who saw them.

Appointments for the Ensuing Week.—Monday, July 11: United Horticultural Benefit and Provident Society's meeting. Tuesday, July 12: Peterborough Agricultural Society's show (three days); Roundhay (Leeds) Horticultural Society's show (two days); Wolverhampton Floral Fête (three days); Herne Bay Horticultural Society's show; Tunbridge Wells Gardeners' Association's show; Jersey Gardeners' Society's meeting. Wednesday, July 13: Liverpool Horticultural Association's show (two days); Guildford and District Gardeners' Association's show; Sussex County Agricultural Society's show at Chichester (two days); Gravesend and District Rose, Carnation and Sweet Pea Society's show; Hereford and West of England Rose Society's show; Sheffield Chrysanthemum Society's meeting. Thursday, July 14: Horticultural Club outing to Wisley; Kent County Agricultural Society's horticultural show in Knole Park, Sevenoaks (three days); Widcombe (Bath) Sweet Pea Show. Friday, July 15: National Rose Society's show. Saturday, July 16: Elstree Horticultural Society's Show; Dundee Horticultural Society's outing; Virginia Water Horticultural Association's show; Ainsdale Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Torenia asiatica.*—The characteristics which distinguish this fine plant are abundance of flowers at nearly all seasons of the year, elegant growth, and easy cultivation. For the decoration of a cool stove, or a warm greenhouse, during nine months of the year, it is scarcely surpassed by anything which even our richest collections possess. I find that old plants which have bloomed are seldom of much value a second season, and therefore a sufficient stock of young plants should be kept up. These may be propagated at two seasons, spring and midsummer. In selecting cuttings choose short-jointed pieces of young wood, such as exhibit a tendency to produce flowers, as these will form handsomer specimens and bloom earlier than if long-jointed pieces, having no inclination to blossom, are used. The first lot of cuttings should be got in as early in spring as is convenient, say, February, or early in March; they should be planted in a thoroughly drained pot, filled with sandy, peaty soil, covered with a glass and placed in a bottom heat of from 75° to 85°. When sufficiently rooted, which will probably be in the course of a month, pot singly in five-inch pots, and place them in a close moist temperature till they have become established. A rather close, warm temperature will be necessary during the summer months, and the plants should be placed near the glass, where the air can be freely admitted on all favourable occasions. During very bright, sunny weather it will be of service to the plants to afford them a thin shade for a few hours, about mid-day. If properly attended to, with pot room, etc., they should be handsome plants in ten-inch pots, before winter. A temperature of from 50° to 55° will be sufficiently high from the middle of November till the middle of January, and water must be carefully supplied while the plants are comparatively inactive. Towards the end of January, or as early as the growing temperature of from 60° to 65° can be maintained, shift the plants into their flowering pots. The size of these must be regulated by the taste and convenience of the cultivator. The plant is a vigorous grower and will fill a fifteen-inch pot; or if well supplied with manure water, very fine specimens may be obtained in twelve-inch pots. These will commence flowering early in spring, and will continue to grow and flower for months. *Alpha, Gard. Chron.*, July 10, 1852.

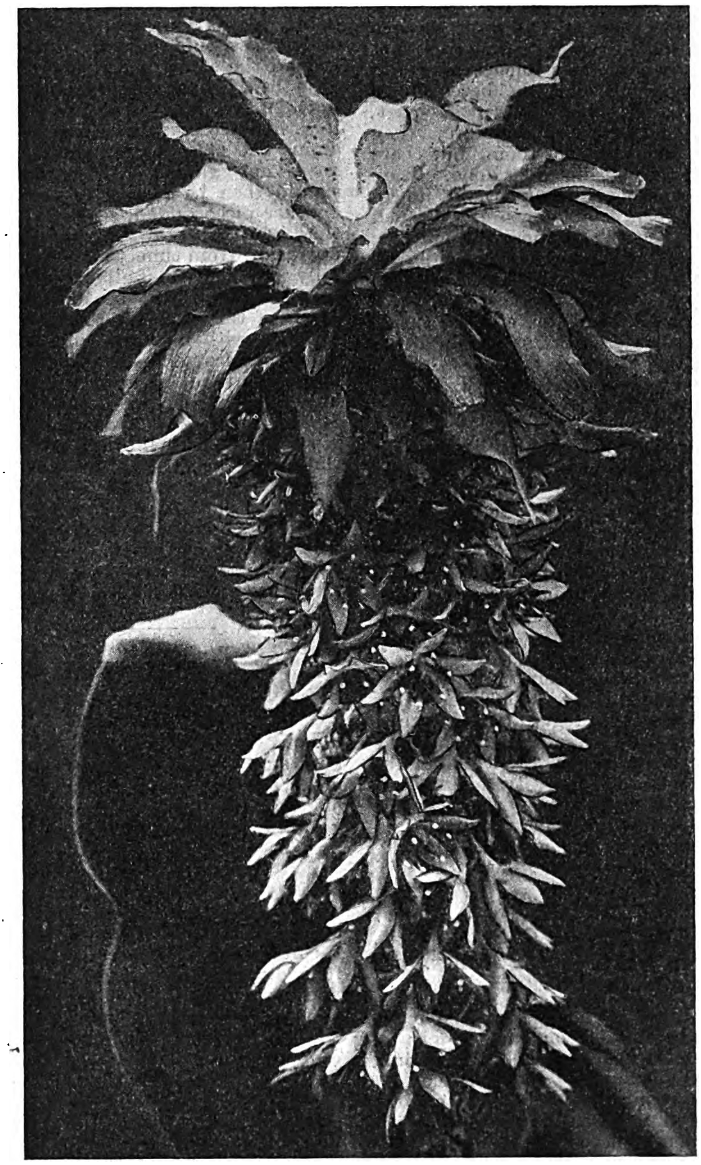


FIG. 12.—EUCOMIS BICOLOR.

R.H.S. Award of Merit, June 28. Flowers greenish-white with purplish margins and filaments. Shown by Mrs. Carl Holmes.

(see p. 16.)

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon, Bletchley Park, Bletchley, Bucks.

Lycaste.—Lycaste Skinneri and other members of this useful and interesting genus have made considerable new growth and are in a suitable condition for repotting, which is needed each year. Where many plants of the different species and hybrids are included in a collection the flowering period extends over a considerable period, and the repotting of the different varieties should take place in the same seasons as they produce their flowers, taking care that the young growths are a few inches long and new growths developing from the bases of the plants. Lycastes are, for the most part, vigorous-rooting subjects; therefore, they may receive considerable pot-room, but care must be taken that this is not over done. They delight in a rather retentive compost, but unless the loam is of an open, friable nature, too much should not be used in the compost. A suitable compost consists of equal parts of good fibrous loam and turfy peat, broken up roughly, with all the dusty and earthy particles removed, and sufficient rough sand or crushed brick added to ensure water passing through the compost quickly. Although these Orchids require ample waterings when in full growth, they resent a heavily saturated rooting-material at all times. The plants should be potted rather firmly, keeping the crown a little below the rim of the pot, and the leading growths as near the centre as possible. Grow the plants at this season in a light, airy position in a cool house, as the majority of them require an even temperature the whole year round; at a later date they may be placed in a house where they may receive a little extra warmth. After the roots have grown freely in the new material they may be watered whenever they become dry, but when at rest only sufficient moisture is needed to keep the plants plump and healthy. The distinct and rare L. Dyeriana differs from the majority of Lycastes in regard to its culture; having pendulous growths somewhat after the manner of Cattleya citrina, this species should be grown in only a small quantity of rooting-material. It grows best suspended near the roof-glass in a house having an intermediate temperature. All Lycastes resent overhead spraying or syringing at any season.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Turnips.—Sowings of Turnips may be made frequently to provide a constant supply of roots throughout the season. The beds should be well watered during hot, dry weather, or the roots will be stringy and tough. Keep the foliage well dusted with old soot, and use the Dutch hoe frequently between the rows.

Onions.—If large Onions are required for exhibition the plants should receive every attention now that the bulbs are swelling. Frequent applications of liquid farmyard manure should be given, and these are best supplied during the evening. When this stimulant is difficult to obtain, guano will be found an excellent substitute. At no time should the ground be allowed to become very dry, or the bulbs will split. Use the Dutch hoe frequently, and if the weather is very dry, apply a mulch of old Mushroom-bed manure along the rows. Keep a sharp watch for mildew, and if detected, either dust the crop with sulphur, or spray the bed with liver of sulphur (sulphide of potassium), on two or three occasions, using the specific at the rate of one ounce to three gallons of water.

Late Potatos.—If not already done, the late Potato crop should be sprayed with either Burgundy mixture or Bordeaux mixture. This work should be done thoroughly, taking care that every part of the foliage is wetted with the specific. As spraying is a preventive and not a cure, it should be done when the mixture will act as such, that is before disease has attacked the plants. It will probably be found necessary to spray again once or twice to make sure that the blight is prevented. Late blight disease is more troublesome in some districts than in others, and it is especially prevalent when the summers are wet.

Celery.—Where this vegetable is being grown for very early exhibition purposes, a start should be made to bleach the stems, presuming the plants are growing freely and about fifteen inches high. As this operation takes from six to eight weeks, it should be attended to forthwith. I advise the use of strips of brown paper, about four inches to five inches wide, and these should be wrapped three or four times around the stems, after first removing all side-growths. Tie the paper both at the top and bottom, but not too tightly. In a short time it will be necessary to remove the band and examine the stem to see that slugs or woodlice have not gained an entrance. The paper should then be placed in position again, and another piece added, so as to gradually bleach the stem as growth proceeds; repeat this operation from time to time, until the plant is fully grown, when, if all has gone well, a perfectly bleached stem will be obtained. During the whole of this time the roots should be liberally supplied with moisture, diluted liquid manure from stables and cowsheds being excellent for the purpose. A small ridge of soil about two inches high should be placed at the base of the paper, and if a small quantity of soot is sprinkled on this, it will act as a deterrent to slugs and other harmful pests. The foliage should be sprayed with clear water during the evenings of hot days and kept frequently dusted with old soot during the early mornings while the dew is present on the foliage. This will keep the Celery fly away. A preparation known as anti-fly is also useful for this purpose.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Pot Peaches.—So soon as the trees in the early and successional houses are cleared of their crops, the pruning, cleansing and re-arrangement of the trees will be necessary. Experienced growers will know which shoots to retain for next season's fruiting; all superfluous growths which have borne fruits should be cut away. Remove the trees to a cool, open position out-of-doors, and partially cover or plunge the pots, allowing plenty of room for light and air to enter the branches. If the wood is fairly strong and the foliage robust, it is best to err on the safe side and not use much animal manure, but to apply a thin dressing of loam and light manure. Trees which show signs of weakness from heavy cropping may be assisted to plump up their buds by dusting the soil with soot, bone dust, and a little fresh loam, and then applying diluted liquid manure, which will wash the other materials down to the roots. The trees must be kept clean by copious syringings on fine evenings. Give the roots an abundance of water when moisture is necessary.

Cherries.—Pot and permanently-planted Cherry trees will now be cleared of their fruits, and the former may be placed out-of-doors. The house in which the trained trees are growing should be abundantly ventilated. Early to start and early to rest are the main points to observe in the management of these trees and the retention of the foliage. Red spider is a most troublesome pest to Cherries grown under glass, and whilst syringing could not be done when ripe fruits were hanging, the trees should now be cleared of them by syringing with an insecticide or clear water. Inside borders should be kept well mulched, if only to keep the soil cool, and, as a matter of course, watered freely, also the roots fed if necessary. In very hot weather shade is beneficial, and the whole roof of the house may be covered with netting.

Plums.—As the fruits on many of the early pot trees have been harvested, such trees should be removed out-of-doors and plunged where they can be mulched, watered and syringed with the pot Cherries. Black and green aphides are more troublesome to Plums than red spider, and, if necessary, the house should be well fumigated before any of the trees are removed. When fruitless trees have been removed, rearrange those retained a greater distance apart, as Golden Drop and other choice late varieties need plenty of light and air to cause the fruits to colour and ripen well. These late trees will require a top-dressing of rich materials and feeding copiously with diluted liquid manure. Syringe the trees carefully about the stems, and damp the floors and walls, both early in the morning and late in the evening. The beauty of the Plum is its bloom, and this is soon marred by spotting with water, especially hard water, but where plenty of soft water is available, an occasional wetting will do them no harm, always provided every part of the fruit is wetted thoroughly. An abundance of air, without exposing the fruits to rain, must be given from the time the colouring becomes perceptible, and the size of the fruits may be increased by pinching the points of those shoots, which in due course will be removed, and also by closing the house for a couple of hours on fine afternoons, opening the ventilators later as is considered necessary.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Stocks.—Where it is desired to have Stocks in flower during the winter, the seeds should be sown forthwith, and again at a later date, to obtain a succession of flowers in the spring. These useful plants may be had in bloom practically all the year round by sowing seeds at intervals during the spring and summer. Some of the best varieties for growing in pots are All the Year Round, Beauty of Nice, Royal Purple and Perpetual. Stock seeds germinate very quickly, therefore it would be unwise to attempt to raise them in heat. There is no more suitable place in which to germinate them than a cold frame, for in cool conditions the seedlings will make short, stocky growth, and there will be far less risk of them damping off. The receptacles should be filled with a light, open compost, which should be shaded from bright sunshine until germination takes place, when the seedlings may be gradually exposed to more light. When they are large enough to handle they should be pricked off singly into small pots or, if desired, three plants may be placed in one receptacle and grown on intact. Stocks are very partial to lime, therefore when the final potting takes place, see that plenty of lime rubble is added to the soil in which they are to be grown.

General Remarks.—Seedlings of Cinerarias, Calceolarias and Primula sinensis will now require attention. Prick them out into boxes or pans. To ensure fine specimens of Cinerarias, the seedlings should be kept growing steadily. A cold frame, under a north wall, will suit them admirably, but this is not always available, therefore, if grown in a house, shade must be provided, for Cinerarias dislike direct sunshine. Calceolarias will need much the same treatment, for these plants also will not thrive in a dry, warm atmosphere. Keep their surroundings moist, and very little trouble will be experienced with green fly, which is a troublesome pest of the greenhouse Calceolaria. Plants of Primula sinensis should also be kept growing steadily under the coolest conditions possible. The compost for this plant may consist of equal parts of good, open loam and leaf-mould, with plenty of sand added to ensure water passing through it quickly. In the plants' later stages, less leaf-mould should be used in the soil; rather substitute a little dry cow manure after passing it through a fine sieve. Seedlings of Humea elegans are ready for pricking off into small pots, which are preferable to boxes, as the plants are very liable to damp off in the latter. Any light, open compost will suit them at this stage, but they must not be grown in a close, hot atmosphere.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD, Wrotham Park, Barnet, Middlesex.

Layering Strawberries.—To obtain strong Strawberry plants for fruiting early next season, layers should be prepared so soon as they are ready. In some gardens Strawberry plants are raised and planted in autumn for the express purpose of obtaining strong runners for setting out early in the season and for supplying fruit to follow those from under glass, the maiden plants usually fruiting quite ten or twelve days in advance of the older ones. If the plants have not been allowed to flower and have been watered occasionally during the recent dry weather, there should be numerous layers ready at this date. Prepare sufficient pots in readiness according to the number of runners required. I prefer to use three-inch pots, and these should be filled to within half-an-inch of the rim with sweet, fertile soil prepared specially for the purpose. Press the soil rather firmly. It is not necessary to use drainage material, a little turf at the bottom of the pot being all that is necessary. Select and peg to the soil in the pot healthy runners, choosing one and sometimes two, if of suitable size, from the one stolon. Water them freely in dry weather, more especially as the roots develop. With suitable attention the runners should be fit to plant out in a month's time; they will develop strong, sturdy fruiting crowns by the end of the present season. In the meantime, have the ground thoroughly prepared in readiness for the reception of the young plants. Strawberries grow best in firm soil which has been deeply worked and not too heavily enriched with rank manure. On certain soils a liberal sprinkling of Clay's fertiliser at the roots of each plant in spring will have a beneficial effect, both on the growth and the size of the individual fruits.

Forced Strawberry Plants.—Our best and heaviest-cropped plants are those which have been forced; indeed, the crop from these plants this year is by far the best I have had during the past three seasons. In planting out forced plants in the open first give the roots a thorough soaking with water, after which loosen them and plant firmly. Set the plants at two feet apart and water them frequently in dry weather until the new roots have developed freely. Do not allow the plants to remain in the pots longer than is necessary, the aim being to encourage a free growth and build up strong crowns by the end of the season. Any flowers that appear may be pulled off and runners removed. Keep the land free from weeds by hoeing it occasionally.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Rhododendrons and Azaleas.—As these shrubs pass out of flower the old flower heads should be picked off, for the formation of seeds is very exhausting to the plants. A mulching of decayed leaves should be placed over the roots, but put on thinly, for a heavy mulch would exclude the air, and if applied too deeply around the stems the plants may be killed. It is not generally realised that this and deep planting are the direct causes of ill-health and the ultimate death of many Rhododendrons.

Cytisus and Genistas.—These genera include some of the freest-flowering of shrubs. Neglected plants are apt to get bare and leggy, and to prevent this the shoots should be partially shortened when the plants have finished flowering. This need not necessarily be done every year; the grower should, to a certain extent, be guided by the amount of growth made, and the size he wishes the plants to attain. Most of the species may be raised from seeds; the hybrids and varieties must, however, be increased by means of cuttings or grafting. Cuttings are best made from half-ripened wood, and they may be dibbled into sandy soil, under a bell-glass, either in the open or in cold frames. Grafted plants may be worked on seedlings of the common Laburnum.

Rambling Roses.—These plants should be pruned so soon as possible after they have finished flowering to allow the young growths plenty of time and space to develop, as strong, well-ripened shoots are essential to free-flowering. Where plenty of new shoots are developing, all the old ones may be cut out. It may however, in many cases be necessary to retain a portion of the old shoots for furnishing the space. In making a selection of varieties for furnishing pillars and pergolas, preference should be given to the many beautiful Wichuraiana varieties, as their hard, glossy foliage renders them less subject to attack from green-fly and mildew. On the other hand many varieties in the multiflora section are subject to attacks of mildew and red spider. Tall standards of this type should be pruned in much the same manner as the others.

Sorting and Cleaning Bulbs.—Where large quantities of bulbs are used for spring bedding they should be cleaned and sorted, so that orders for any additional ones required may be sent to the bulb merchant at an early date. All bulbs should be kept in a suitable building, in cool and airy conditions. They should never be left exposed to hot sunshine; although one frequently reads that exposure to sun is the correct way to dry them off. In the case of Tulips, at least a few hours' exposure to hot sunshine is certainly fatal, for the exposed side is quickly scalded. Where large quantities of Tulips are grown, disease is an ever present menace; therefore, a keen watch should be kept for any signs of disease during the growing season, and when lifting and sorting them all but sound specimens should be destroyed.

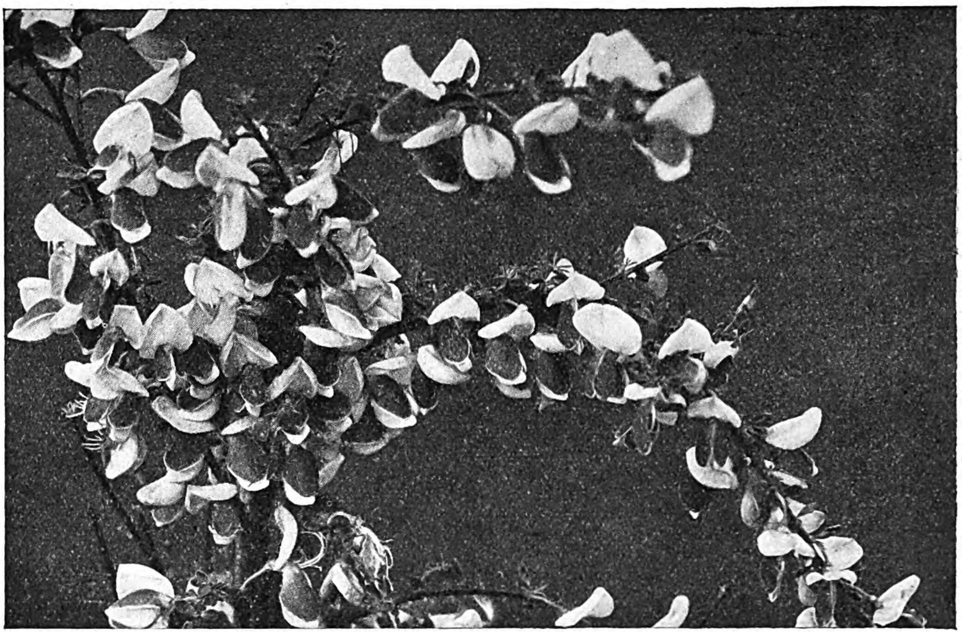


FIG. 13.—CYTISUS LORD LAMBOURNE.
(see p. 29).

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Propagating Alpines, etc.—The present month is very suitable for the propagating of many varieties of spring-flowering plants. A shaded frame should be made ready for their reception, preferably one with a north aspect, as in such a position the rays of the sun will not fall direct on the newly-inserted cuttings. All Saxifragas are readily increased at this season, and in the case of the finer varieties, which do not increase rapidly, the cuttings or side-shoots may be inserted singly in small pots, and the latter plunged to the rims in ashes or other moisture-holding material. Cuttings or pipings of the members of the Dianthus family also root freely and if rooted now, they will make good plants for placing outside during the autumn. Aubrietias may also be increased from single cuttings; large plants may be lifted, divided and small, partly-rooted pieces transferred to the shaded frame for a time, when they will soon make useful tufts for planting out. Pyrethrums of the herbaceous section which have finished flowering may be increased by cutting over the spent flower-stalks, leaving them about six or eight inches high, and then twisting or jerking them out of the clump singly, when it will be found that numerous dormant or partially developed buds are situated near the base. These spent flower-stems, if inserted in a sandy compost, will soon develop roots and useful plants are soon produced in this way.

Seedlings.—The raising of plants from seeds is one of the most fascinating of garden occupations, and where seeds of hardy Primulas, shrubs, etc., were sown earlier, the seedlings should now be ready for planting out in nursery rows, or transferring singly to small pots, according to the class of plant dealt with, as some do not transplant freely unless from pots, while others, such as the hardy Primulas referred to, may be lifted as desired and moved to their permanent quarters without injury. Plants which are difficult to transplant, unless in pots, include Cordylines, Eucalyptus and Buddleias. Many varieties of shrubs may be easily raised from seeds, sown so soon as they are ripe; others may be kept for a year in sand before sowing them. Plants raised from seeds seem to possess more vigour and robustness than those raised from cuttings.

Sweet Peas.—Spring-sown plants are flowering, and care should be exercised in removing spent blooms, and supplying the rapidly-growing plants with moisture. In dry districts a mulch of strawy manure will be of great benefit, after giving the rows a thorough soaking with water. Should further support be required, this should be given the plants in good time, either in the form of additional stakes, or by placing tall posts and wide-meshed wire-netting along both sides of the rows. Where Sweet Peas are grown on the single-stem system, Bamboo canes, eight feet or nine feet long, placed to each plant and fastened securely to a wire at the top, strained between two stout posts at either end of the row, make a neat and strong support, but much time must be devoted to these plants in removing side-shoots, tendrils and premature flowers, as well as in keeping the growths upright by tying them to the stakes.

NOTES ON MECONOPSIS.

JUNE is the month for this genus, though flowering may begin so early as May and be prolonged into July. With each succeeding year the Himalayan Poppies attract more attention, especially in Ireland and Scotland, where they do particularly well; so much so that recently Mrs. Walter Jones staged a first-rate exhibit of Meconopsis species only at the R.H.S. show, when M. grandis received an Award of Merit.

Quite a number of species are now generally cultivated, and M. integrifolia, M. pseudo-integrifolia, M. quintuplinervia, M. Prattii, M. Baileyi, M. simplicifolia, M. paniculata and M. Wallichii are established favourites. Even M. grandis, a somewhat over-rated plant, in the south at least, is becoming commoner, while M. robusta, M. aculeata, M. chelidonifolia and a few others are seen about.

Twice have I been shown what was alleged to be M. brevistyla growing profusely, only to find that it was really M. integrifolia. It does not seem to be realised that M. brevistyla, if in cultivation at all, is very rare, and not a success; nor is it any improvement on its understudy. Nurserymen, who ought to know better by now, still offer M. paniculata, or M. robusta, under the name of M. 'nepalensis,' (or some variant thereof); failing that, they use 'robusta' as a synonym for 'paniculata.'

There is a difficulty about the name 'napaulensis.' It is as certain as anything can be in so inexact a science as botany that M. napaulensis, if it is not M. robusta, is identical with M. Wallichii var. fusco-purpurea, and by all the canons of precedence, Wallichii, whether blue, vinous or cream, should be dropped in favour of the earlier napaulensis, the vinous coloured form of which first received the name. But no multiplication of Geneva conventions can banish an established name like M. Wallichii from our gardens, even in the interests of historical accuracy. It may even be doubted whether nursery catalogues can be permanently cured of calling the yellow-flowered M. paniculata (or M. robusta), M. 'nepalensis.' But though I shall not aid and abet horticulture in this latter heresy, it is merely pretentious to write of M. napaulensis when one means M. Wallichii; though I have only met with one catalogue which flouted custom in this way, and even then the effect of esoteric knowledge was marred by the inclusion of M. Wallichii as well! If M. napaulensis was really M. Wallichii, what was M. Wallichii?

While on the subject of names, one might refer to the persistence, amounting almost to perversity, with which the Edinburgh school speaks of M. betonicifolia when they mean M. Baileyi. Here again, I am afraid they will find the latter name too firmly embedded for painless extraction without gas—even if the operation is strictly legal. I have already pointed out the difference between the two species (*Annals of Botany*, July, 1926, and *Gard. Chron.*, June 26, 1926), and if ever M. betonicifolia can be persuaded to flower—I understand there are seedlings—it will be possible not only to confirm this, but perhaps also to find new grounds for divorce. So far, the opponents of M. Baileyi have relied on reiterated assertion to tempt the uninstructed from their allegiance, but evidence, so far not forthcoming, would be more effective.

By the way, may one be permitted to ask why the true M. betonicifolia has not been in our gardens for the last two decades? It was one of Delavay's finds, described by Franchet nearly forty years ago, and ought to have been rediscovered and introduced by a generation of collectors in Yunnan—though I must confess I never came across it there myself. Dare one suggest that the real answer is, it *has* been in cultivation, but proved a miserable failure, like M. Delavayi, M. lancifolia, M. impedita, M. Henrici and other species? This surmise, if it aims aright, bodes ill for the identity of M. betonicifolia with the easily grown M. Baileyi. If not, what a pity so much energy was spent in introducing the above-named pariahs, while time and again the peerless M. betonicifolia was overlooked!

Under cultivation, M. Baileyi is showing variation in two directions. Apart from a slight instability of colour, common to all blue-flowered species, I find (1) an increase in the number of petals, and (2) an increase in the number of flowers. As regards the first, in Tibet I saw scores of plants, and no flower ever had other than four petals. Here the number is almost always six to eight. As regards (2), in Tibet, it was the exception to find a plant with more than about six flowers, arranged in a loose, terminal cyme. Here a dozen or more usually develop, and it is not uncommon to find the leaves all up the stem bearing axillary flowers. (Compare the photograph of the wild plant in *The Gardeners' Chronicle* for May 8, 1926, with that of the same species growing at Wisley, published on June 25, 1927.)

The flower of M. Baileyi is interesting from the fact that it is one of the few species—M. latifolia is another—in which filaments and petals do not match in colour; the filaments of M. Baileyi are colourless, those of M. latifolia purple. There is a charming creamy-white form of M. Wallichii, sprung from seed of the bluest, sometimes met with in gardens. It flowers earlier than the blue, and has a purple instead of a cream stigma, otherwise it resembles the normal form. I have heard that M. simplicifolia also throws this cream variety, which confirms my experience in Tibet; I have no hesitation in saying that the 'Ivory Poppy' collected there (K.W. 5,766) is nothing but a cream-coloured simplicifolia.

There is really no excuse for confusing M. Wallichii and M. paniculata, even out of flower. The former is a dark green plant suffused with golden hairs, the latter is much paler; also the leaves of M. Wallichii are almost pinnatisect, those of M. paniculata are only lobed. If even then confusion can arise, there is one test which I have never known to fail. All the Poppy family contain poisonous juices, but in these two species there is a copious latex, gamboge-yellow in M. paniculata, sulphur-yellow in M. Wallichii.

A word of advice to collectors, who rarely give adequate descriptions of plants, and in this instance almost always omit crucial information regarding the colours of anthers, filaments and stigma. It is important to record these in the field, because it is practically impossible to ascertain them from dried specimens. *F. K. W.*

BULB GARDEN.

LEUCOJUM AESTIVUM.

OWING to its vigorous growth and freedom of flowering, this Snowflake was a most conspicuous plant on the banks of the lake here in spring. During the winter the roots of these Leucojums are under water. On April 23, when the plants had flowers on stalks two feet in length, the roots of the strongest bulbs were several inches below the surface of the water. The foliage is equally strong and very dark green.

The soil here is a sandy loam, and the situation in which the plants are growing sheltered and partially shaded.

Although seldom seen as a water-side plant, this Snowflake may be thoroughly recommended for planting in such a situation where the soil is light and sandy.

Often described as a May-flowering plant, many of the elegant, drooping, white flowers were fully open on Easter Sunday, April 17, and were most useful for cutting.

Bulbs may be planted from the end of September until the middle of November.

COMMELINA COELESTIS.

THIS is a very attractive plant, with glossy foliage and rich blue flowers. Often described as hardy, the tuberous roots are impatient of stagnant soil, and unless grown in warm, well-drained soils, are liable to perish during the winter.

On a naturally-drained gravel soil in a Berkshire garden, this Commelina proved to be quite hardy, and produced an abundance of fertile seeds, colonies of seedlings springing up around the parent plants each season.

Plants raised from seeds sown under glass in the spring may be planted out in May or June and will flower during the summer. There is a white variety, but it is not often seen in gardens.

Commelina coelestis grows to a height of eighteen inches. *C. Ruse, Tingrith Manor, Bletchley.*

ALPINE GARDEN.

SPRAGUEA UMBELLATA.

A PLANT of Spraguea umbellata was given me by Mr. John Grandfield, of Acton, who had been travelling in California and particularly on the Sierra Mountains of Nevada at considerable elevations.

Spraguea umbellata is recorded as having been introduced to this country from New Mexico in 1859, and was described as a hardy plant for the rockery. It is closely related to Claytonia, and differs from it chiefly in having two large, roundly-heart-shaped, membranous, white sepals. The flowers are white and purple, borne in dense clusters, and are about the size of Peas. The plant I have consists of twenty stems, three to four inches long, radiating from a single crown, and each stem is terminated by an umbel of these singular looking flowers. The radical leaves are spathulate and fleshy, while the stem leaves are very small. The whole of this was supported by one long tap-root with few fibres. The plant is very prolific and plentiful where it occurs, and evidently well-adapted for resisting drought. *J. F.*

ASTER SUBCAERULEUS.

IT is long since I received from the late Max Leichtlin, the plant correctly known as Aster subcaeruleus, which figures in gardens and nurseries very frequently under the name of A. diplostephioides, a different Starwort altogether. Max Leichtlin was also responsible for a fine variety, which he called A. diplostephioides Leichtlinii.

The true A. diplostephioides is rare in cultivation, but is not difficult to distinguish from A. subcaeruleus. The most marked feature, which will enable identification lies in the fact that the true A. diplostephioides has a purple disc, while that of A. subcaeruleus is yellow. After a lapse of some years owing to my first plant being lost in removal, I have again become the possessor of a plant sent me as A. diplostephioides, but which proves to be A. subcaeruleus. I do not regret this much, as it is a very charming Aster of low stature, suitable for the border or the rock garden. It grows freely and soon makes a good clump of deep green, oval leaves, from which, to a height of about twelve or fifteen inches, arise stems bearing large, lovely flowers, like those of the purple Aster alpinus, with a bright golden disc. The first blooms opened here before the end of June, and the plant will continue in bloom for a good while, adding much attraction to the place in which it is planted. *S. Arnott.*

CULTURAL MEMORANDA.

PROPAGATING ROCK GARDEN PLANTS.

FROM now onwards is a suitable time to propagate rock garden plants by means of cuttings, which are best rooted in pots or pans in sandy soil. Most of them will root readily in cold frames, plunging the pots in ashes or sand, while any difficult subjects should be rooted under bell-glasses.

The cuttings should be made with a very sharp knife. A sand-bed made up to within ten inches of the glass in a cold frame facing south is an ideal place for them. Tiffany should be stretched over the glass as a protection against very hot sun, a much more satisfactory method to adopt than white-washing the glass.

Damp the cuttings lightly several times daily in hot weather, and admit air for an hour only in the mornings until root action commences.

Saxifrages and many of the coarser-growing, creeping plants may receive rougher treatment; fairly large pieces, without roots, planted in sixty-sized pots will make good specimens in a week or two, if kept close in a frame. *S. Bowler.*

FLOWER GARDEN.

NEPETA MUSSINII.

THIS beautiful Cat-mint is useful for edging beds and borders on a large scale and should be more generally used for the purpose. Although this plant is easily increased by means of division, it is also readily propagated from cuttings, which may be inserted at this time, dibbling them into a bed in a cold frame. By this method a large stock may be raised quickly and the plants will be ready for planting out during the autumn. *J.*

THE PENTSTEMON.

IT might be difficult to get a wholly satisfactory answer to the question: "When was the work of improving the Pentstemon commenced?" But there can be little doubt that such species as P. Hartwegii, P. Cobaea and P. gentianoides were the forerunners of the fine trumpet-like, brilliantly-coloured types now common in gardens. Scotland is the recognised home of this useful hardy border plant, and it is quite probable that many of the earlier improvements resulted from the work of Scottish florists. French raisers also introduced many of the earlier improved varieties, and subsequent improvements have produced a race of plants with high decorative qualities.

Pentstemons are very easily cultivated, and few other hardy plants yield such an abundance of blossom during the summer. Owing to their compact, sturdy habit and the brilliant colouring of their flowers, they are alike valuable for planting in beds, in ribbon borders, and as bold groups in colour scheme borders, while they are also useful for furnishing cut blooms.

Although not exacting as regards soil, a rich, friable loam suits them best, and soil of a light, sandy nature should be well prepared for them before planting. During periods of dry weather occasional waterings will be necessary, and a mulching of short manure is very helpful in maintaining vigorous growth. Under good cultivation the plants continue to produce their handsome, pyramidal spikes of flowers from July to October.

Pentstemons are easily raised from seeds, and those saved from a good strain may be expected to produce a large percentage of good varieties. Propagation from cuttings is equally easy, and is naturally the method employed for increasing named varieties. The cuttings made from shoots which spring up around the base of the flowering stems or from the lateral growths of the flower-spike, should be inserted in August and September. The softer wood roots more readily than that which is too hardened, leafy shoots, about four inches long, making the best cuttings. They should be inserted firmly in sandy soil, in boxes or pans, and placed in a cold frame, or if large quantities are needed, they may be dibbled into cold frames. *A. P. C.*

IRIS GARDEN.

IRIS ZAHAROON.

THIS beautiful Iris (Fig. 14), was exhibited by Mrs. W. R. Dykes at the Iris Society's exhibition on June 2. It is a variety of outstanding colour, buff overlaid with carmine, and it has a beautiful golden crest. Iris Zaharoon is a large, shapely flower perhaps a trifle "thin," but its unusual colouring appealed to all who saw it.

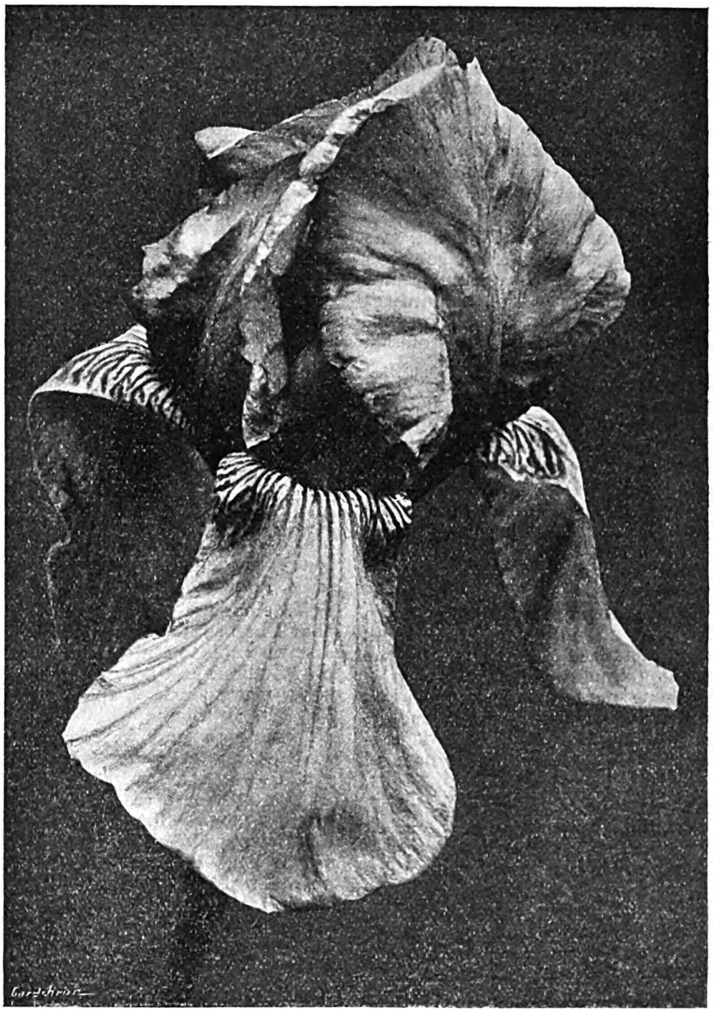


FIG. 14.—IRIS ZAHAROON.

SOME OUTSTANDING VARIETIES.

THE number of varieties and hybrids displayed at the show of the Iris Society, on June 2, offered a splendid opportunity to compare the merits of the individual sorts, and a few notes on outstanding varieties may be of interest to those who intend to plant Irises this season.

The following sorts are amongst the best in cultivation:—Ambassadeur is a large and noble flower; the standards are reddish-violet, the falls of a rich velvety violet. The flowers are produced on a well-branched spike. Abenda has a free-branching habit, bearing, on tall, stout stems, flowers of good shape. The standards are prettily incurved and are coloured old rose, shot with bronze; the falls are a rich velvety madder-crimson, with a bronze haft. Athens is a good white flower of fine substance and form; perhaps the finest of the whites is Mrs. Robert Emmet; the large, milk-white flowers are of good substance, and borne on stout spikes in the greatest profusion; they are set off by a conspicuous yellow beard. Many of the spikes bear from seven to thirteen flowers. Amber is a most striking self-yellow variety and has a well-branched spike.

Belladonna is a pleasing shade of China blue; the flowers are developed on well-branched stems and are agreeably scented. Bruno is a conspicuous and noble Iris of exceptional merit. Lord Lambourne is a showy garden variety. The plant has tall, well-branched flower-spikes, bearing flowers with rosy-fawn standards overlaid with bronze; the falls are rich madder-crimson, reticulated with white at the haft, and the flower has a golden-yellow beard. Marjorie Tinley is a gigantic pallida form, bearing large, well-formed flowers of remarkable substance on well-branched stems, and very free. The standards are broad and prettily incurved, of a soft lavender shade; the falls are deep mauve. Lady Sackville is a charming variety and exceptionally free-flowering; the large, well-formed flowers are borne on stout spikes; the standards are a beautiful silvery blue and prettily incurved. The falls are rich violet-purple with a conspicuous orange beard. Mrs. H. F. Bowles is a very effective variety with a colour almost impossible to describe. The standards are bronze, tinted lavender, and peculiarly shaded yellow at the base; the falls are velvety reddish-purple. Crimson Glow is of an attractive and uniform shade of crimson-rose with prettily frilled standards; the spikes are well-branched and very free flowering. Ballerine is a delicately scented variety of pallida form. The plant has a well-branched habit; the standards are light bluish-violet, broad and prettily waved, the falls of a deeper shade. Benrimo is a large flower of good form; the standards are bright blue and incurved, the falls a light purple. The general contour of the flowers of Feronia is all that could be desired; the plant develops large, stout spikes, bearing well-formed flowers of a soft rose; the falls are old rose, prettily reticulated with crimson. The variety George Yeld, named in honour of the veteran and distinguished raiser of Irises, is one of the most showy of all Irises. The standards are bright apricot shaded with rose, the falls a brilliant wine-red edged with buff. The standards are soft brown overlaid with gold; the falls brick red with a glistening sheen, and with a conspicuous white-lined base. It is a most profuse bloomer.

Mrs. Marion Cran is a tall, well-balanced plant, bearing flowers of great substance. The blooms are a delightful shade of light silky rose. Lent A. Williamson is a vigorous grower; the standards are bright blue, the falls velvety purple suffused with blue at the edges. Mary Gibson is one of the most showy and distinct Irises in cultivation; the standards are a delicate shade of pale bronze, overlaid with rose; the falls are old rose suffused with bronze and the flower has a conspicuous yellow haft and orange beard. Mr. Edward Harding is one of the most effective of Irises, having handsome flowers with violet-purple standards and black and violet falls.

Other good sorts noted were Rosalba, Quaker Lady, Opera, Damozet, Shekinah, Azure, Olympus, Oliver Murrell, Swazi and Dimity. *W. Logan.*

THE PANCIATICI OR FLORENTINE BIZZARRIA ORANGE.

I WAS lately reading again the description of this plant written in 1674 by the physician Pietro Nati, Professor of Pharmacology in the University of Pisa, when two writings on the same subject came in my hands; the first, published in this paper, April 9, 1927, p. 241, as a report of an article by the Japanese Professor Tyôzaburô Tanaka; the other written by Mr. Charles F. Swingle, in the *Journal of Heredity*, of Washington. Both these articles conclude rightly that this plant is a graft-hybrid or chimera; but they do not carry any light on its origin, which appears still wrapt in mystery.

For many years I have had the opportunity of studying this plant, two specimens of which are grown *ab antiquo* in the neighbouring Royal garden of Castello.

It may be concluded that in the three last centuries the cultivation of the Agrumi (Lemons, Oranges and Citrons of Florence) was common in the Florentine region. No villa or town garden was lacking an espalier or *boschetto* (little wood) of these plants, for which, however, a protection with straw mats or other material was necessary during winter.

The Citron of Florence, Citrus Medica, was preferred as the noblest of all. It was common practice to graft it on Citrus Aurantium amara stock, the Sour Orange, because it is the hardiest and most vigorous of all the Citrus; *quippe caeteris congeneribus vegetiores*, writes Professor Nati.

The villa Panciatici, *della Torre degli Agli*, situated near the gates of Florence, had its *boschetti* of Citrons, and Giuseppe Piccioli, gardener to the Grand Duke of Tuscany, in a little book entitled *La Coltura dei fiori, etc.*, (Firense, C. Pagani ed. 1797, p. 31) describes the production of the Bizzarria. It is to be noted that Piccioli had been gardener of the Marquis Panciatici, and was the author of the *Hortus Panciaticus*, therefore he was in a position to know the facts.

Piccioli writes that a plant of Citron, grown in a little wood, for an unknown cause, died. Later, a shoot was produced on the stock, at the foot of the plant (*ripullulò al piede sopra il Selvatico*); the shoot was not grafted, and when it flowered and fruited, showed mixed characters of the Citron and Sour Orange. This is evidently the origin of a graft-hybrid by natural decapitation.

If we do not accept this origin, we must admit that by chance, indeed very strange, the stock on which the Citron had been grafted, was a sexual hybrid Sour Orange × Citron. The possibility of such a cross, suggested originally by Strasburger, has been disproved by experiments; nobody has been able to produce this hybrid, and I myself have made formerly some vain attempts to do so.

It is certain, however, that no special artifice of graft or of any other kind intervened in the production of this plant, as has erroneously been stated, even recently. Professor Nati writes in his pamphlet that the gardener of Villa Panciatici assured his master that the Bizzarria had been produced *nulla malorum adoptione, nulla sactionis artificio nulloque adulterii ingenio, sed solo eventu genioque naturae.*

Professor Nati's pamphlet entitled: *Phytologica observatio de Malo Limonia Citrata aurantia Florentiae vulgo La Bizzarria*—Florentiae, 1674, is very rare. It is remarkable for its scientific exactness for its times. All the varieties, as may be observed from the branches, leaves, flowers and fruits of this plant are described with accuracy, and modern writers may find very little to add to this subject.

But even more interesting is the suggestion of the possibility that some influence may have passed from the scion to the stock. He writes at p. 16: "*In hoc multiplici et longa annorum serie iterato arborum conjugio contingere aliquando potnisse ut ex confinio ocularis insitionis, in quo temporis dinturnitati parmixta utriusque arboris natura concreverat, quam varii per communes fibrarum ductus permeantes humores diu aluerunt, unum aliquando germen utramque malorum speciem probe reservans, emerserit* . ."

Piccioli's little book is even more rare. Various subjects are therein treated, and the origin of the Bizzarria incidentally. I possess a copy of the fourth edition printed at Florence by Anton Guiseppe Pagani, ed. C., edit. 1797. *Dr. A. Ragionieri, Castello, Florence.*

A REVISION OF VIOLAS.

(*Continued from page* 414, *Vol. LXXXI.*)

V. ELEGANS is the name given by Kirschleger, who wrote the *Flora d'Alsace*, to a Viola which he found there, and which is now known as V. lutea subspecies elegans, in contradistinction to V. lutea subspecies sudetica. The latter is the Eastern form of this widespread European Viola; the former is the form which is the better-known, and a native of England (as in Teesdale), Scotland and Ireland, France, Belgium, the Rhine Province, Switzerland and Alsace. It is, in short, the Western European form, and is distinguished from the other by its more slender and graceful stems, by the palmate rather than pinnate division of the stipules, and by the much longer spur. The Eastern form also is almost invariably yellow, whereas V. elegans is yellow or violet or these colours mixed. The French form is deep violet. Mr. Lofthouse, who is an enthusiastic admirer of V. lutea from Teesdale, sent me a violet-coloured specimen which I took to be the French form, but which came to me as var. amoena. It is tempting to think that this was the V. amoena with which, along with V. stricta, the late Mr. James Grieve crossed V. lutea from the Pentland Hills, and with the Pansies of 1863, to produce the modern garden Viola. But V. stricta has never been traced; and V. amoena is almost equally mysterious. Many gardeners have proclaimed the merits of V. lutea sbsp. elegans.

V. elongata.—Under V. calcarata, I wrote that I had so far been unable to trace this name. I am now able to state that it is V. elongata Huet de Pavillon, and a synonym of V. heterophylla sbsp. messanensis, a species from the hills near Messina in Sicily, which is distinct from both V. calcarata and V. Eugeniae. It is grown in this country under the name of V. pseudo-gracilis—a name which must be abandoned, as there are two distinct Violas called pseudogracilis (one of Strobl and one of Huter, Porta and Rigo), and it is the other pseudogracilis which has the prior right to the name. V. heterophylla sbsp. messanensis is a pretty Viola, rather reddish-violet in tone, with slightly incurving petals, which is worth growing and may be obtained from nurseries. There is, however, a much finer form, called imperatrix, which awaits introduction from the "toe" of Italy.

V. Eugeniae, Parlatore, is distinct from both V. elongata (see above) and V. calcarata. It belongs to the Altaica section, the most easily recognised differences between this and the Calcaratae being the longly-petioled lower leaves, the broader, upper leaves, and the generally short spur of the former, as compared with the shortly-petioled lower leaves, the narrower upper leaves and the very long spur of the latter. V. Eugeniae is a dwarf, almost stemless, plant, with yellow or violet flowers and an extremely short spur and round, ovate leaves. It comes from high places (as high as 9,400 feet) in the Central Apennines, especially in the Abruzzi, and on the Gran Sasso d'Italia.

V. Falconeri, Hooker f., is now related to V. Jordanii as a variety of that species, which is well-known on the Riviera, and occurs spasmodically also in eastern Europe. The variety was found near Srinagar, in Kashmir, at about 10,000 feet.

V. glabella, Nuttall, is not a big, but a relatively small, yellow Violet, and is not recorded from Colorado, but is a north-east Asian and Alaskan species. It is in fact the connecting link between V. uniflora of Siberia on the one hand, and V. pubescens of the middle and eastern United States. It inhabits the Kurile Islands (more famous for Azaleas), and Kamtchatka, and thence crosses the Bering Sea to Alaska, whence it descends into British Columbia and along the Californian coast as well as the Sierra Nevada. In general appearance it suggests V. biflora of the European Alps, but botanically is quite distinct. Until recently, it was offered by at least one Scotch nursery, but now seems difficult to procure. I obtained it recently from California under the name of V. cordata.

V. gracilis, S. and S.—For an account of this perplexing species, see *Gard. Chron.*, September 18, 1926. There is apparently no means of killing the deeply-rooted tradition that this is the Sweet Violet of Greece—a myth repeated only this year by one of our most erudite gardeners. It is a plant of Asia Minor, which is occasionally found in Macedonia. The type is in danger of being lost among the never-ceasing numbers of hybrids, many of which are indistinguishable one from another, and some of which, like the most recent of all, V. Therkildienii or V. g. Huntercombe Purple, are nearly inseparable from garden Violas. But they are all beautiful—none, perhaps, more so than Mrs. Bowles, a hybrid of V. gracilis and V. Munbyana, several supremely beautiful patches of which may be seen at Wisley.

V. gracillima, Chaten, is the French form of V. lutea sbsp. elegans. It is violet rather than purple, and a most beautiful form, suggesting a transition to V. Bubanii of the Pyrenees.

V. grandiflora Griseb., is not V. Clementiana, but is synonymous with V. Zoisii.

V. hastata, Michaux, belongs to the same group as V. pubescens and V. glabella. It is the halberd or spear-leaved Violet, with arrow-shaped leaves, from hill forests of the Eastern U.S.A. The flowers are deep golden yellow.

V. hederacea, Babill., is a very beautiful, almost stemless Violet, small-leafed and rosette-forming, which was classed by Sweet under a distinct genus as Erpetion. The flowers are rather small but numerous, generally violet, more rarely white. It is frequent here and there in New South Wales, but is widespread over Victoria and in Tasmania, where it grows in moist, sandy places. I have had it from a French nursery, but whether it proves hardy remains to be discovered.

V. hirta, L., belongs to a group which is chiefly distinguished from the Sweet Violets by the absence of scent and the absence of runners. The leaves of V. hirta are not so elongate as Farrer states, the vernal leaves being just longer than broad, and the summer leaves being oblong-ovate. Neither are they invariably hairy, as there is a form in which the lamina of the adult leaves is entirely hairless. It is impossible to say whether by V. sciaphila Farrer intended V. ambigua W. and K., or V. pyrenaica, Ramond. Both are fragrant (unlike V. hirta), but the flowers of the former are rose-violet, paler at the throat, and of the latter lilac, or sometimes dark violet. The group, as a whole, comprises V. hirta, widespread over Europe; V. collina, Besser, pale violet, white at the base with hairy whitish leaves, from eastern Europe mainly; V. hondoensis, which is the representative of V. collina in Japan; V. ambigua, W. and K., from Eastern Europe, Armenia and Siberia; V. Thomasiana Perr. and Song., the representative of V. ambigua in the Alps, with pale rose and very fragrant flowers; and finally V. pyrenaica, Ramond, a sporadic form which occurs here and there from the Pyrenees to Savoy, Switzerland, the Tyrol, Salzburg, Carinthia, Bulgaria and Greece, and the Caucasus. The differences between these species are, with the exception of the alpine V. Thomasiana, more botanical than of garden value, and the gardener will regard them all indiscriminately as varying in colour and pubescence only, while remaining in a distinct class from V. odorata. *E. Enever Todd, Lt.-Col.*

(*To be continued*)

ROSE GARDEN.

STIMULATING GROWTH.

ROSES in a stunted condition require a little patience and perseverance on the part of the grower before their condition can be improved. Diluted liquid manure applied to the roots on frequent occasions is as suitable as anything.

A mistake often made in growing Roses is watering them excessively. If the soil is hard and dry, give the plants a good soaking, and then apply the liquid manure, but do not water again for several days.

Some interesting facts concerning the feeding of Roses were issued a short time ago by the U.S.A. Bureau of Plant Industry:—After various experiments with certain manures it was considered that farmyard manures were the most effective, and are valuable when composted or mixed with soil or when in a well-rotted state as a mulch for growing crops. Rapidly fermenting manure will injure the roots of almost any plant. Liquid manures should therefore be made from materials that have already fermented or rotted under such conditions as to conserve their fertilising value. The following proportions will make good solutions: 10 lbs. of pulverised sheep manure to fifty gallons of water; or 20 lbs. of cow or horse manure, when in a comparatively dry condition, to fifty gallons of water; or 3 lbs. to 5 lbs. of poultry manure to fifty gallons of water. The manure should be placed in a coarse gunny sack and soaked in water for several days, sousing the sack up and down occasionally and mashing it with a blunt stick, so as to thoroughly break up the contents.

Strong-growing Roses with good root-systems will be benefited by feeding them with such liquid manure once in ten days or two weeks during the period of most active growth. When growth is slow or checked by cold or cloudy weather, feeding should be discontinued until active growth again indicates its need. The frequent use of the hoe will do much in promoting vigorous growth.

There is much greater danger of over-feeding than under-feeding. If there are indications of over-feeding, sow on the beds some quick-growing plant that will appropriate some of the excess of plant food; also give the soil a liberal coating of gypsum, which will counteract an excess of soluble salts. When the weather is favourable an excess of soluble material in the soil may be reduced by thoroughly drenching it with water.

DISBUDDING.

To have good Roses, disbudding must be resorted to. One fine bloom on each shoot is more satisfactory than a number of small ones which, if left to grow, tend to weaken the plant. The central bud is always the best, therefore remove all side buds so soon as they are seen. If the blooms are not cut, the old flowers should be removed so soon as they are over, shortening them to the first strong shoot or bud. This will generally be about two or three leaves below the bloom. Suckers of Briar or Manetti stocks should not be allowed to develop, for if they are not removed entirely they will soon kill the plant. *G. B.*

TREES AND SHRUBS.

ERICA TETRALIX MOLLIS.

ERICA Tetralix, the cross-leaved Heath, is found wild all over Britain and is very common in the west. There are several varieties, and at the meeting of the Royal Horticultural Society on June 8, Messrs. D. Stewart and Son showed the beautiful form, illustrated in Fig. 15, named mollis, the varietal name being derived from the soft, downy character of the leaves, which gives the plant a frosted appearance. The specimen shown was covered with the little white bells, and had every appearance of making a good garden plant. The Floral Committee granted the variety an Award of Merit.

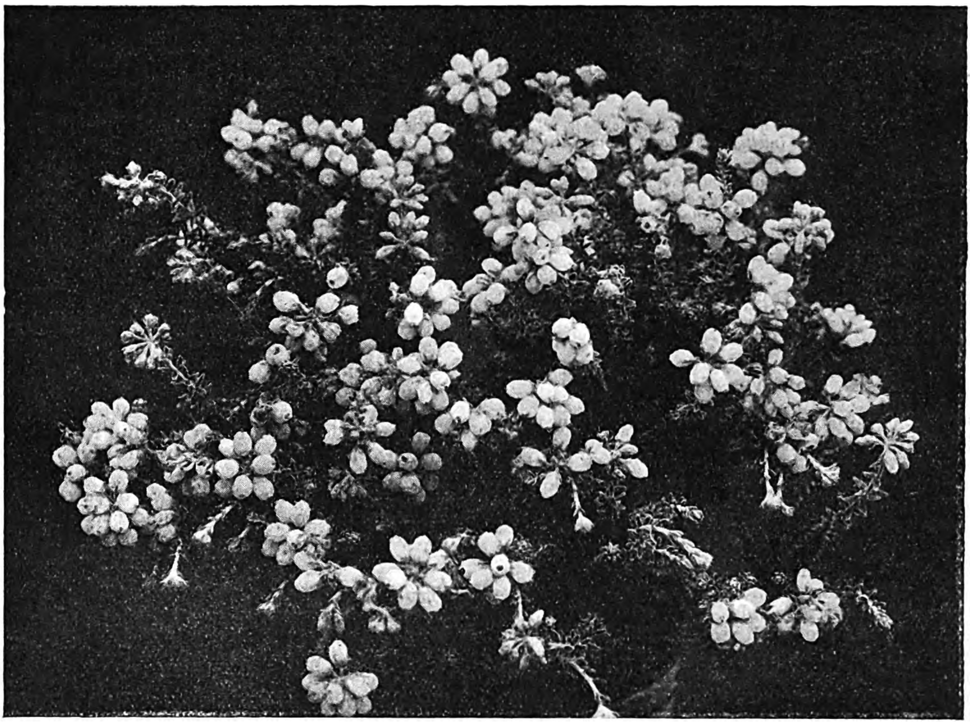


FIG. 15.—ERICA TETRALIX MOLLIS.

CYTISUS LORD LAMBOURNE.

THE genus Cytisus includes many excellent garden plants which are not only very floriferous, but have a graceful habit, and are useful alike in the shrub border and the flower garden. The fine hybrid illustrated in Fig. 13 was shown by Messrs. Watson and Sons, Ltd., at the Chelsea Show on May 25, and received the R.H.S. Award of Merit. It is a variety of the Dallimorei type with primrose coloured standards and keel, and pretty, crimson wings. It is a notable addition to the new race of hybrid Cytisuses.

JASMINUM REVOLUTUM.

THIS, most robust-growing of all the Jasmines, is a comparatively rare garden plant. Unlike the common Jasmine, which is so deservedly popular, this is not a twining species, but of spreading, rambling habit. It is an admirable wall shrub, and will thrive wonderfully well even in poor soil. An established specimen will produce quite large clusters of fragrant, bright yellow flowers from midsummer until long after autumn has set in. The foliage of this species, which in former days seems to have been known as the Italian Jasmine, though it is a native of Afghanistan and the North-west Himalayas, varies in an interesting manner. The leaves are mostly alternate. The earliest-formed are often entire, and the later ones have from two to six secondary leaflets and on occasion even more. These side leaflets have very short stalks, while the terminal leaflet, which is always larger than the others, has a definite stalk. This most desirable yellow Jasmine continues to grow until late in the year, with the inevitable result that the late, sappy growth is generally killed by frost, but as the flowers are produced on the current year's growth, this loss is of no moment.

THE GOLDEN ELDERS.

To the forester, our native Elder is, rightly, a woodland weed, but in the wild garden a well-placed standard may well be a thing of beauty, and especially so when growing by the side of a stream. In such places where bold masses of bright colouring are desired during the summer and autumn, the Golden Elders have much to recommend them, and a maximum of effect may be obtained with a minimum of labour.

The Golden Elder also makes a fine subject for planting in street boulevards and road shrub borders, and is planted to good effect in some of the streets in this way at Southend-on-Sea

There are several good golden-leaved varieties of Elder in general cultivation, the best two are Sambucus racemosa plumosa aurea, a variety of the red-berried Elder, and S. nigra foliis aureis, a golden variety of our native species. Both have very showy foliage, which becomes most intense in colour during the "dog days." When autumn sets in, these Golden Elders often lose colour effect through the later-formed leaves being larger and paler than those produced during the height of the summer. This loss of colour value may be prevented if the growing points are pinched out during the late summer. Golden Elders so treated will usually retain their foliage longer than those untreated.

POLYGONUM BALDSCHUANICUM.

So far as I know, this is the most rapid of all hardy, ornamental climbers, and in consequence is of great value when it is desired to clothe an unsightly building, tree stump or any other objects as quickly as possible. Even when first planted it will make gratifying progress, but when a plant gets into its stride as it were, its progress is truly prodigious. Then, a shoot twenty feet in length, is quite an ordinary progression—twice that length is by no means beyond its abilities—and, as a vigorous specimen will produce many such shoots in a season, an extensive area is soon covered with luxuriant vegetation.

Quite early in the summer, and again in the autumn, this vigorous, at times rampant, climber produces abundant panicles of feathery, whitish flowers from side-shoots. When in flower it is exceedingly beautiful. Although seeds are rarely, if ever, produced in this country, the seed vessels often persist, and as they are tinged with red, they add to the attractiveness of the climber.

This showy Polygonum seems indifferent as to soil and will flourish in almost barren conditions, but it needs a light and open situation. *A. C. B.*

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IDEAL GARDENS AND PLANT LORE.

III.—In Homer's Wide Domains.

FOR various reasons, Homer claims a place in the forefront of our studies. He is among the earliest of the poets whose writings throw light on the garden-craft of antiquity. From him the later poets of Greece and Rome drew their inspiration, and to him they owe, as do we ourselves, the various elaborations of the Gardens of Alcinous and Ulysses. He alludes to so many plants, and has so many references to nature, that I would have a spacious plot mid hill and dale, with reedy brook and shaded groves on the scale of Goodwood or Alton Towers, for the landscape gardener whom I would employ for my Homeric Garden. Those of Adonis, and others yet to be plotted, would fill up various nooks and corners, play hide and seek behind the rocks and scaurs, or spread themselves out by the lawns and sloping meads.

Take, by way of illustrating my idea, one or two of the many references contained in the Iliad. The translations are culled from many sources, the choice being regulated by the desire to make the best use possible of the quotations from the point of view of the horticulturist. There is the description of the wonderful shield of Achilles and its various adornment :—

> "On it he represented, among other things, a soft, fallow field of rich glebeland, broad, thrice-ploughed, and in it many ploughmen drove this way and that, turning about their teams. And when they had come again to the end of the field, a man advanced and placed in their hands a cup of wine, honey-sweet. And the ground grew black behind them, looking exactly as though it had been ploughed, though the work was of gold, a marvel to behold."

Then follows the account of the vineyard, heavy laden with Grapes of great beauty; and though the clusters were of gold they, too, appeared to be purple black, supported throughout on props of silver. Virgins and youths of tender age and innocent mind bore away the luscious fruit in baskets woven of the withies which grew by the water's side. A pasture in a lovely grove full of white sheep and folds, with huts and cottages is also depicted. There is the picture elsewhere (*Il.* xiv, 120), of the mansion opulent in resources, with corn-bearing fields and plants laid out in rows as in an orchard. The well-cultivated field is more than once in evidence, the newly-watered garden dried up by the north wind of autumn being also used to purpose by way of analogy.

We are led to the spot where the Elms are burned up together with the Willows and Tamarisks ; the Lotus is consumed and the rushes and reeds which grew in great abundance round the beautiful streams of the river (*Il.*, xxi, 345). The wood, copse and grove are often mentioned, with "the nymphs who inhabit the pleasant groves and springs of water and the grassy meads," whom we shall be eager to surprise as we wander round the grounds at eventide. Once again we find ourselves watching the workman as he fells a mighty Oak, a giant Poplar or a towering Pine.

The Odyssey is also full of suggestion for the laying out of the grounds. Fountains play, rills meander through the meadows or down the hill-sides, crowning them with a luxuriant growth, amid which flowers blossom. Thus—referring to a cave with its attendant grotto, grove and glen, we have this delightful picture :

> The cave was brightened with a rising blaze ;
> Cedar and Frankincense, an odorous pile,
> Flamed on the hearth, and wide perfumed the isle.
>
> * * *
>
> Without the grot a various sylvan scene
> Appeared around, and groves of living green ;
> Poplars and Alders ever quivering played,
> And nodding Cypress formed a fragrant shade.
>
> * * *
>
> Depending vines the shelving cavern screen,
> With purple clusters blushing through the green.
> Four limpid fountains from the cliffs distil ;
> And every fountain pours a several rill,
> In mazy windings down the hill ;
> Where blooming meads with vivid greens were crowned,
> And glowing Violets threw odours round
> A scene where, if a God could cast his sight,
> A god might gaze, and wander with delight.
> *Od.*, v. 75-95 (Pope).

Truly a scene to make a mortal envious! Grottoes are mentioned elsewhere, and add much to the beauty of the scene. Frequently do we read also of the groves which crown the hills. Even the land which lies neglected by the inhabitants is rich in fruits and crops.

> Yet here all products and all plants abound,
> Sprung from the fruitful genius of the ground ;
> Fields waving high with heavy crops are seen,
> And vines that flourish in eternal green ;
> Refreshing meads along the murmuring main,
> And fountain streaming down the fruitful plain.

What then will be the case when the gardener, skilled in all the arts of the field, exercises his craft ?

> Thy careful hand is stamped on all the soil,
> Thy squadroned vineyards will thy art declare,
> The Olive green, blue Fig, and pendant Pear,
> And not one empty spot escapes thy care ;
> On every plant and tree thy cares are shown,
> Nothing neglected, but thyself alone.

Here, then, are hints for our landscapist, and we now have to consider our method of procedure. For the plotting of this far-reaching stretch of garden, field and woodland, with its hills and valleys, its river and streams, its corn-land and green sward, I would proceed somewhat as follows. From the terrace broad steps should lead to the garden, of which that of Alcinous shall be taken as the type. It is of the princely pattern beloved of Bacon, and he shall be called in to assist in the pleasing task of laying it out. Next to this will be the garden of Ulysses, which may be taken to represent the orchard. Pergolas covered with luxuriant vines shall lead away to meadow and stream, avenues of Plane trees shall conduct to the fat lands where the Olive flourishes, while the distant hills shall be crowned with Oak, Ash and Beech. Partly under their shade—which shall not be like that of the Birdless Wood at the Duke of Richmond's, forbidding life of plant and fowl—and partly on the sun-flecked slopes shall be broad stretches of Hyacinth and Crocus, of brilliant Poppy and vernal or autumnal flowers, such as are alluded to here and there in a general way though they are not explicitly named.

Such being the broad outline, we may now proceed to the details. We begin with the Gardens of Alcinous, concerning which further particulars will be found in an article already published in these columns.[*] Pliny mentions the Gardens of the Hesperides, of Adonis and of Alcinous as being objects of great admiration among the ancients. In the Odyssey where the description is found, are doubtless many "exaggerations and distortions of merchants' and sailors' narratives." This, however, will not detract from our interest in the oldest and most beautiful description of an Ionian garden[†] which has come down to us through the ages. Already in Plato's days it would seem that the Odyssey was regarded as containing "tall talk" and travellers' yarns, for we read in the *Republic* (x., 614) :

> Well, I will tell you a tale, not like that of Odysseus to Alcinous, but of what once happened.

The Gardens of Alcinous, like those of the Hesperides are, as the author of the *Natural History of the Ancients* reminds us, "another proverbial Paradise." Alcinous was the just and rich king of the Phaeacians in Corcyra (the modern Corfu) devoted to gardening.

Ulysses approaches his domains, and he is instructed to go to a spot :

> Nigh where a grove with verdant Poplars crowned,
> To Pallas sacred, shades the holy ground ;

and bending his way thither, he reaches the point where

> A bubbling fount distils
> A lucid lake, and thence descends in rills ;
> Around the grove a mead with lively green
> Falls by degrees, and forms a beauteous scene.
> Here a rich juice the royal vineyard pours,
> And there the garden yields a waste of flowers.

By these tokens led, he reaches the palace grounds, and soon espies the wondrous garden, a description of which is now to be given.
Hilderic Friend.

(*To be continued.*)

PLANTS NEW OR NOTEWORTHY.

RHODODENDRON ODORIFERUM.[‡]

A New Species of the Maddenii Series.

A SHRUB with stout, slightly punctulate branchlets ; young shoots purplish, loosely covered with pale, flaky scales. Leaves elliptic to oblanceolate, obtusely rounded at both ends

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[*] See *The Gardeners' Chronicle*, March 6, 1926, p. 174.

[†] Here we may read Gissing's *By the Ionian Sea.*

[‡] *Rhododendron odoriferum, Hutchinson, sp. nov.* (Series Maddenii), affinis R. Maddenii Hook f., sed inflorescentiis 6-7-floris, corolla anguste tubulosa, staminibus 15 differt.

Frutex, ramulis crassis leviter punctulatis, novellis purpurascentibus laxe lepidotis. Folia elliptica ad oblanceolata, utrinque obtuse rotundata vel basi breviter cuneata, usque ad 11 cm. longa et 6 cm. lata, supra glabra et nitida, infra dense lepidota, squamis parvis brunneis leviter inaequalibus et contiguis vel fere contiguis ; nervi laterales utrinsecus 12, graciles sed infra distincti ; petioli circiter 1 cm. longi, supra anguste canaliculati, crassi et minute punctulati ; gemmae axillares inferiores sub-anthesin minimae, superiores crassae et ovoideae vel interdum innovationibus bene evolutis. Inflorescentia circiter 6-7-flora, subumbellata ; pedicelli crassi, 1-1.5 cm. longi, laxe lepidoti, plerumque basi bracteola tenue lineare instructi, hac interdum cum pedicello adnata et calycis lobum simulante. Calyx obsoletus, undulatus. Corolla odorata, alba, extra roseo leviter suffusa, tubo intra viridescente extra lepidoto vix angulato circiter 4 cm.-longo basi 1 cm. lato ; lobi 5, leviter ovato-elliptica, apice rotundati, circiter 3 cm. longi, extra medium versus lepidoti. Stamina 15, breviter exserta, glabra ; antherae brunneo suffusae. Ovarium 10-11-loculare, squamis tenuibus albidis laxe indutum ; stylus fere ad apicem lepidotus stigmate carnoso lobulato magno coronatus

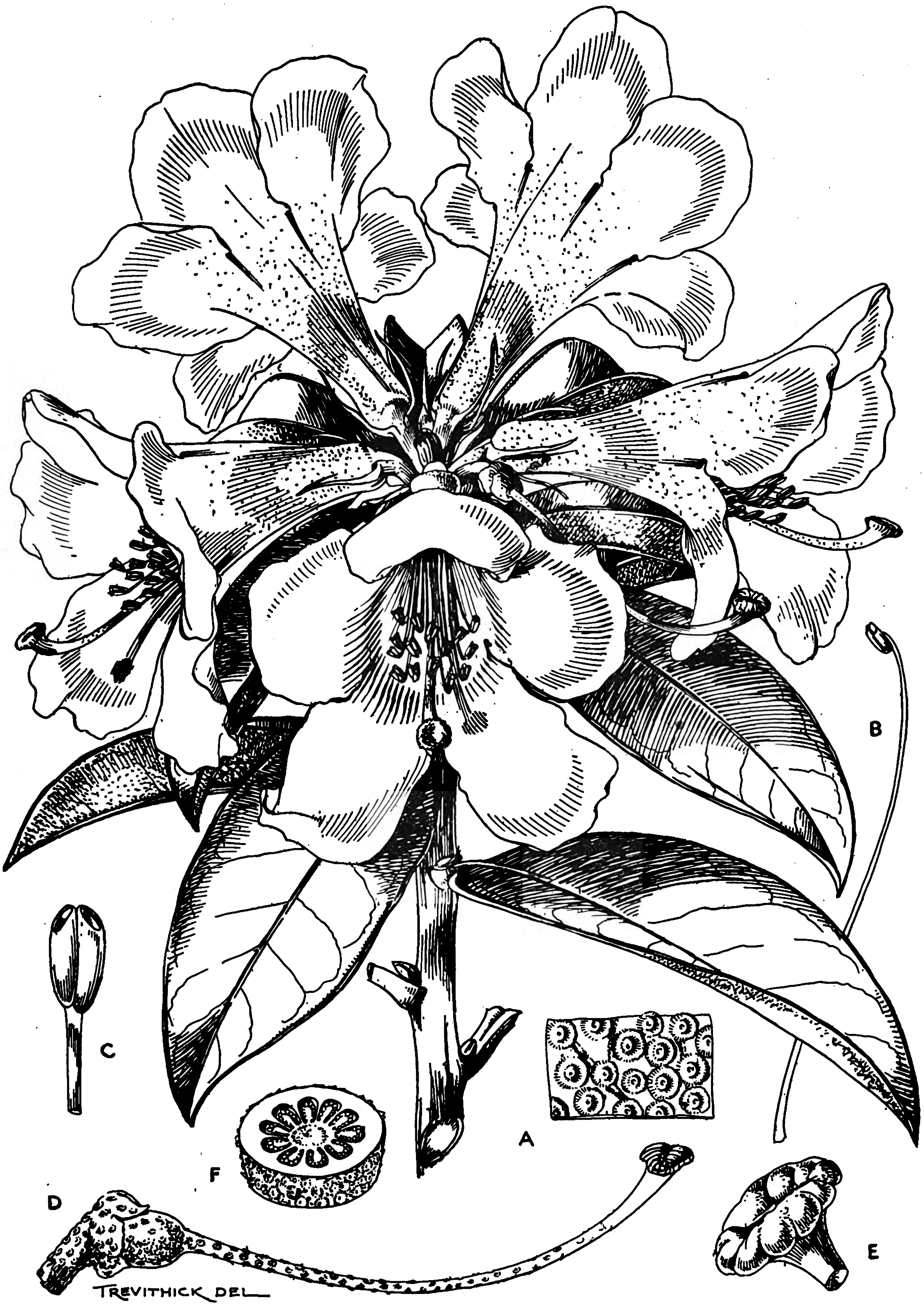

FIG. 16.—RHODODENDRON ODORIFERUM, HUTCHINSON.

Flowers white, scented. A. Scales on the lower surface of the leaf. B. Stamen. C. Anther. D. Calyx and pistil. E. Stigma. F. Cross section of the ovary.

or shortly cuneate at the base, up to eleven centimetres long and six centimetres broad, glabrous and shining above when mature, densely lepidote below, with small brown scales, the latter rather unequal-sized and contiguous or nearly so ; lateral nerves about twelve pairs, very slender but distinct below ; petiole about one centimetre long, very narrowly grooved on the upper side, thick and minutely punctulate ; lower axillary buds quite small at flowering time, the upper ones thick and ovoid or occasionally the leaf-shoot fairly well developed. Inflorescence about 6-7-flowered, sub-umbellate ; pedicels stout, 1-1·5 centimetre long, laxly scaly, usually with a thin, linear, brownish bracteole at the base, or sometimes these adnate up to the calyx and resembling calyx-lobes. Calyx an undulate rim, not ciliate. Corolla scented, white, slightly flushed with rose on the outside, the tube inside tinged with green ; tube scaly all over the outer surface, not angled, about 4 centimetres long, 1 centimetre broad at the base ; lobes 5, broadly ovate-elliptic, rounded at the apex, about 3 centimetres long, scaly near the middle outside.

Stamens 15, shortly exserted, quite glabrous ; anthers tinged with brown.

Ovary 10-11-celled, loosely covered with thin, whitish scales ; style nearly as long as the corolla, loosely scaly nearly to the top, with a large, fleshy, lobulate stigma. Capsule not seen.

Habitat : Southern Tibet ; Upper Nyamsang Valley ; 8,000 feet ; described from a cultivated plant at Kew, raised from seed received from Edinburgh in 1914 (Edinburgh 4-1914).

It has long been known that there are several forms of Rhododendron Maddenii in cultivation, most of which are desirable garden subjects. The plant here described seems sufficiently distinct to deserve a separate name, which is given in reference to the delicious scent of the flowers. To those who are familiar with R. Maddenii, the close affinity of this new species will be obvious. It differs chiefly in the several-flowered inflorescence (in Maddenii there are usually only two to four flowers), in the narrowly-tubular, scarcely angled corolla with rounded lobes, and in having fifteen instead of the usual twenty stamens.

In one of the specimens I have had before me for description, an unusual feature is shown in that some of the bracteoles are adnate to the pedicel nearly to the apex, and they then resemble elongated calyx-lobes. The calyx, however, is merely an undulate rim.

In *Notes of the Royal Botanic Garden, Edinburgh*, 1919, I gave a comprehensive account of the Maddenii series of Rhododendron, including descriptions of a considerable number of new species. I found little difficulty in classifying the species of the two more primitive subseries, Maddenii and Megacalyx, but I was considerably troubled with subseries Ciliicalyx. It is satisfactory to note, however, that several of the species described then from herbarium specimens and distinguished by apparently somewhat trivial characters seem to retain their characteristics under cultivation. One of the best of these is R. Scottianum, and another charming plant is R. supranubium. Some of these species would, no doubt, be useful for crossing with the best of the Triflorum series, for there is undoubtedly a close phylogenetic connection between the Maddenii and Triflorum groups, the former being the older. The more primitive types are represented by R. Maddenii itself with its numerous stamens and ovary cells, and another primitive species is R. polyandrum, which has twenty-five stamens. A progressive reduction is observable in subseries Megacalyx in the number of stamens (15–10), and of the ovary cells (5), whilst a new habit has been adopted by the epiphytic R. Dalhousiae. This habit is repeated in subseries Ciliicalyx, R. dendricola growing on the tops of large forest trees. The nearest point of contact between the Maddenii and Triflorum series seems to be represented by R. supranubium, which has an inflorescence never more than three-flowered, and very often only one-flowered. *J. Hutchinson, Kew.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

"Who shall decide when doctors disagree ? The fine Meconopsis figured on page 449 of *The Gardeners' Chronicle* for June 25 is named by Mr. Grant White, M. Baileyi and, on the same page, M. betonicifolia by Mr. A. M'Cutcheon of the Edinburgh Botanic Garden. It is to be hoped that the latter title may hold good, thereby averting confusion with a very different species—M. simplicifolia var. Baileyi. Under whatever name this beautiful Poppywort is to be known officially, it is a great acquisition, and if it proves, as reported, to be a true perennial, its value will be greatly enhanced. Meconopsis simplicifolia—both the dark blue type and Bailey's sky-blue variety—sometimes survives to flower in a second season ; would that it had the constitution of the Welsh Poppy, M. cambrica, which is a troublesome and most persistent weed in the garden, though its yellow and orange flowers are welcome in woodland where, however, it may only be naturalised if rabbits come not, for they never give it a chance.

Incarvillea never displays its crimson trumpets to better advantage than in woodland. We grow one species here under the name it brought with it many years ago—I. brevipes—a title which is not confirmed in the *Kew Hand List*, so I know not whether it may be I. compacta or I. grandiflora. Anyhow, it flowers in May and is followed by I. Delavayi in June. Hitherto we have protected Incarvillea against rabbits with wire-netting ; but I am not without hope that this may prove unnecessary, seeing that it has escaped and flowered outside the netting without paying the penalty of being devoured.

One does not meet with Incarvillea in as many gardens as its perfect hardiness and remarkable beauty should ensure it a place. Probably many plants are destroyed in forking over the borders in spring, for it is very late in starting into growth, and the young leaves being dark brown are very apt to be overlooked unless the place is securely labelled.

Nothing brings old friends, living or lost, more surely and tenderly to mind than the flowering of plants which they have given us. Thus do two species of Senecio, now coming into bloom, remind me of that generous amateur, the late Sir John Ross, of Bladensburg, who gave me cuttings some years ago. One of these is S. Huntii, from the Chatham Islands, where it grows to a height of twenty feet. It bears abundant panicles of yellow flowers resembling those of the better-known S. Greyi and, like that species, carries its dense, silvery foliage throughout the winter. The other is S. Hectori, from the South Island of New Zealand, a very fine species bearing showy flowers with white rays; the large pale green leaves are six to twelve inches long, and three to four inches broad, a short space at the base of each being pinnate, a feature distinguishing this shrub from all other species of a vast genus. New Zealand is peculiarly rich in Compositae. The late Mr. Cheeseman enumerated thirty species of Senecio, a genus of which we in Britain reckon eleven as native, and are most familiar with the common Ragwort and the too common Groundsel, beloved by goldfinches.

Wealth of choice among the hundreds of new species of Rhododendron now in cultivation in this country ought not to cause us to forget such old and well-tried friends as the North American R. maximum. Introduced so long ago as 1736, one does not often meet with it in British gardens, yet it possesses points to recommend it. It is perfectly hardy and produces its pretty trusses of pink or white flowers, each richly spotted with tawny green, after midsummer, when nearly all species of Rhododendron have shed their blossom. Among its native hills it grows over thirty feet high ; but I have seen none in this country over ten feet.

Solanum crispum is in great beauty just now. One usually sees it grown against a wall, but it is better to keep that protection for plants that require it, which this Solanum does not. Planted in the open, it has formed a rounded bush, eight feet high, and is loaded with lilac and orange blossoms. The Glasnevin variety is far superior to the type, especially as, being sterile, it continues to flower from the beginning of June till checked by autumn frost. It is readily propagated from cuttings. *Herbert Maxwell, Monreith.*

NOTES FROM A WELSH GARDEN.

Though the rainfall was unusually slight and the nights cold and often frosty, the latter part of May and the month of June were marked by an abundance of blossom on subjects of almost every kind. Being retarded by the low temperature of earlier days, Genista fragrans did very much better than usual, the bushes being heavily laden for many weeks with the warm, orange-yellow, deliciously-scented flowers. This was soon followed by that excellent species, G. virgata, which is now (end of June) a billowy mass of delicate lemon-yellow, which has such an attractive setting in the silken silveriness of the foliage. In the rock garden, Cytisus glabrescens was in its own way equally delightful, making a low, dense mound of richest gold. This dwarf, deciduous species, which comes from the Lepontine Alps, bears its flowers, which are large for the size of the bush, on the previous year's wood. It has merit and distinction enough to win for it a prominent place among rock garden Brooms. C. Tomassinianus, its abundant, trefoil leafage in a fresh grassy green, and terminal clusters of sulphur-yellow, is a newcomer here, but it seems hardy, and gives good promise as a rock garden subject.

Among the yellow Sun Roses, two species always attract a large share of admiration. These are Helianthemum Libanotis and H. lunulatum. The former, a thin-habited shrub somewhat after the style of H. umbellatum, but with even narrower leaves of a much paler green, bears an abundance of blooms, each nearly one inch across, in a lovely shade of bright yellow. The other, perhaps better-known, is as close and compact as an alpine Phlox, making a silvery-green, cushiony mass, which it adorns with quantities of little yellow flowers on long pedicels of the same colour. This very charming shrublet is seldom out of bloom the season through, and it can always be distinguished by the tiny crescent of orange at the base of each petal.

Abutilon megapotamicum, put in a few years ago as an experiment, has never looked back, in spite of hard frosts and a northerly aspect. The first of this Brazilian plant's nasturtium-yellow flowers slipped out of its blood-red calyx early in May, and every branch is now hung with these curious "lanterns." In a similar aspect, Tricuspidaria lanceolata has never done better, not having lost a bud in spite of the severity of the early spring, and another evergreen which too often gets snubbed into flowerlessness, but which has this year escaped, is Raphiolepis japonica. The terminal panicles of large white bloom borne by this handsome evergreen are very sweetly scented.

Leptospermums are, perhaps, not quite so good as they were last year. Still, these beautiful shrubs can always hold their own in any June garden ; their elegance of habit and delightful foliage being hardly less attractive than the unique charm of their lovely blossoms. There would seem to exist a good deal of confusion regarding the varietal names in this genus, inevitable, perhaps, in shrubs so easily raised from seed and so apt to vary in the colour and size of the blossoms. In his great work on trees and shrubs, Mr. W. J. Bean informs us that Loptospermums are "easily increased from cuttings," but I have found them uncommonly difficult, that is, without bottom-heat. Among the red-flowered varieties of L. scoparium the variety Chapmanii with blood-crimson blooms seems to be less apt to bleach than the ruby-red var. Nicollii. One of the several specimens that have come here labelled L. Boscawenii is conspicuous for the size of its blossoms, and they are not only a good clear white with a purple eye, but each petal has a streak of carmine.

L. laevigatum, though comparatively small in the blossom, is a very pleasing member of this genus, and no less satisfactory. I am told it is an Australian species.

As flowering shrubs, the grey-leaved Veronicas are not particularly striking, but V. Gibbsii is an exception. This has a rather prostrate habit; the almost orbicular leaves are a steely-grey, and the cone-shaped inflorescences composed of flowers which are not only a good, firm white, but unusually large. A specimen of Styrax Wilsonii, about five feet in height, is now very beautiful, every twig being adorned with nodding, bell-shaped flowers in a glistening ivory-white.

A conspicuous object near the water is Phormium Cookianum. This species, which does not exceed about two feet in height, is earlier to flower and hardier than the better-known P. tenax, and it is a much more reliable bloomer. The plant referred to has now half-a-dozen flower spikes, these rising to about four feet, being very ornamental with their glossy vermilion and yellow blossoms. Near this, but in rather drier ground, Primula suffrutescens is carrying several heads of rose-pink flowers. Here also, and in telling contrast with the fine yellow "slippers" of Calceolaria John Innes, is a little colony of P. capitata Mooreana, its rich Tyrian violet being accentuated by the white mealiness of the stems. Though this fine form is undoubtedly very superior to the type, I have not yet found it to be much more permanent.

Among the mid-season Heaths, Erica cinerea var. coccinea is always distinct and generally first of its race to show colour. It is not only unique in its very dwarf nature and wonderfully rich crimson, but the latter has in it that tendency to scarlet so rare in hardy Heaths. Another first-rate early one of medium height in this class of Heath is E. c. var. Frances, the flowers being a vivid cerise. For associating with dwarf Heaths, Bruckenthalia spiculifolia is a very desirable little Ericaceous plant, its close-set mat of bright green now bristling with rose-pink flower-spikes, about two inches in height.

Geranium anemonaefolium opened its first blooms this season before the end of May. This is unquestionably the finest of all the taller Geraniums, and it is hardy enough to withstand some 15° of frost. The colour of the large blossoms might be described as a rose-carmine, deepening to a ruby eye, and the broad and fleshy, palmate leaves are distinctly handsome. If this magnificent Geranium cannot be considered so perennial as, for example, G. pratense, it is certainly not a biennial, healthy plants that are allowed to ripen their seed often doing well for three or four years. G. Lowei, a true biennial, is as ornamental in the woodland and Heath garden as the foregoing is in the border. It naturalises freely, and the large leaves and stout, angular stems develop brilliant autumn tints. G. refractum is a species not to be lightly passed over in a mixed border, the saucer-shaped flowers being nearly two inches across and a clear wild rose-pink. Though its red flowers are comparatively dull and small, G. macrorrhizum always deserves a place for the sake of the fragrance which emanates from all parts of the plant. The dull green leaves of this old Geranium are broad and bluntly lobed; it grows to about twenty inches and makes a neatly rounded mass which never needs staking or other support. *A. T. Johnson, Ro Wen, Conway, North Wales.*

SOME GARDEN BUILDINGS.

In order to become worthy additions to the amenities of a garden, buildings must be in complete accord with their environment, each a part of a harmonious whole; they should fulfill a direct mission, either utilitarian or artistic, and in several instances, hereafter indicated, should portray local handicraft and feature local material. This latter proviso is a simple natural law, for the local products will be an institution of Nature herself.

An old manor house will call for old-time treatment, and very few things can be more picturesque or restful than thatched tea houses, summer houses or tennis pavilions; the walls may be of local timber, perhaps Larch, with the bark retained, or it may be of local stone and either will be in accord with the surroundings, pleasing, and not in any manner obtrusive.

Glass structures in some situations and for some purposes, may be ornamental as well as useful; I can visualise a large shrub house with timbered back "wall," lightly and strongly constructed, with removable roof and sides, and of sufficient size to counteract insignificance; a splendid home for half-hardy and choice shrubs and plants and a pleasing feature of the garden.

Thatching is becoming a rare handicraft; should it be entirely lost, a beautiful English feature will have disappeared. A thatched building can scarcely strike an incongruous note in the garden, unless it be in too near proximity to a modern house; where thatch, in straw or reed, is not desirable, roofs of local stone tiles, admittedly somewhat expensive, will be natural and pleasing, infinitely superior to slate, which is unsurpassable, perhaps, in its proper utilitarian sphere, and preferable to the strident and wholly unsuitable manufactured red tiles.

Formal gardens may be treated formally, hence the elaborate stone loggia will be happily and appropriately placed in the Italian garden.

Where old buildings, barns, garden houses, etc., exist, it is oftentimes wiser to renovate these, if they are suitably placed, rather than embark upon new ventures; garden building construction must, at all times, be entered upon with extreme caution, and with a breadth of vision encompassing the garden as a whole. Gardens may be irretrievably ruined by ill-advised buildings, as their beauties may be greatly enhanced by the work of a garden artist.

It is well to remember that trees, shrubs and plants are the glory of the garden; the inanimate things are adjuncts to the animate, their duty being to enhance, not to alter or to mar. *Ralph E. Arnold.*

INDUSTRIAL PSYCHOLOGY.

A report* of the first systematic attempt in Great Britain to apply the point of view and methods of industrial psychology to agriculture has just been published by the National Institute of Industrial Psychology. An investigation was carried out last autumn at the South-Eastern Agricultural College of the University of London, at Wye, and at various farms all within the county of Kent. The object of the investigation was to demonstrate in a practical and scientific manner that industrial psychology could be usefully applied in agriculture as well as in the manufacturing industries, mining and commerce, but it was not expected this would lead to the same immediate reduction of waste of time and fatigue as it often does in a factory. It has to be remembered that in agriculture, unit costs are to a very large extent determined by natural yield, while the organisation of the work itself is, to a large extent, regulated or governed by factors of nature beyond immediate control of man. Moreover, although there are 1,500,000 persons in Great Britain directly dependent on agriculture, a single farm which employs more than a dozen regular hands is a rarity. But the report undoubtedly indicates methods whereby Great Britain may increase her home-grown food supply on an economic basis. The investigation was carried out by Mr. Dunlop, who was Scientific Adviser in the West Indies, and Sir Daniel Hall, Chief Scientific Adviser to the Ministry of Agriculture, urged that is should be published as an example of a field that needs to be explored. Mr. G. S. Orwin, Director of the Agricultural Economics Research Institute at the University of Oxford, pointed out the need of far more work on the whole question.

Generally, the report deals with worker's unproductive time, general lay-out, arrangement of material, methods of payment, suitability of tools, and the selection of the worker, according to his special ability for the work he is to undertake. A few of the more interesting examples from the report may be given. It is pointed out that in cases where agriculture merges into industry, as in the picking, grading, and packing of large quantities of fruit, the particulars presented striking results.

It was found, for example, that in picking Strawberries—the most fatiguing of all fruit to gather—a fast picker spent thirty-two minutes of the hour in actual picking, seventeen minutes walking from plant to plant with basket, 8·5 minutes in fumbling at the leaves, and 2·5 minutes in carrying in the load and returning. The Institute of Industrial Psychology therefore suggests to Strawberry growers that it is important that the plants should be as close together as possible, that high yielding types of plants should be selected, and that the packing sheds should be situated at the most convenient points in relation to the general lay-out of the beds.

Another question of interest to all who have glasshouses is the enquiry made into the qualities needed for workers in conservatories. It was pointed out that the ideal worker in a glasshouse should be of small stature. Very tall men or women take up too much room and are usually clumsy. They should be capable of working without discomfort in a warm and humid temperature, and be sympathetic and interested in delicate plants.

Investigations also proved why milkmaids throughout history have been regarded as more competent than milkmen. It was found that in general female milkers were more patient and more talkative than the male workers. The women's method of handling cows was much superior to that of the men, and they spoke to them more sharply when they were troublesome, as if they were speaking to a very naughty child. But if the report is carried into effect, it means the doom of the ordinary three-legged milk stool that has figured in so many pictures and songs, for it is said that the ordinary stool is seriously defective, in so far as its height is not adjustable, and that it would be far better to have an adjustable stool, similar to the piano stool, to suit the height of different cows and milkers.

It was found that there was considerable apathy among farm workers, and it is hoped to arouse more enthusiasm and ambition among them in order to stimulate them to greater effort, accompanied by higher reward, both to themselves and their employers. The report discusses the lack of success of Great Britain in matters of agricultural co-operation, in spite of the fact that the great need of such co-operation is widely recognised, and it is thought that an investigation of this apparent prejudice against co-operation should be undertaken from a psychological point of view. *B. S. Townree.*

NOTICE OF BOOKS.

A New Manual of Trees and Shrubs.*

One of the main characteristics of the late Professor Sargent, the veteran botanist, who passed away in March last, was his singular capacity in attracting and keeping able coadjutors. Those who worked under his direction were stimulated to mighty deeds and herculean labours. The small staff of the Arnold Arboretum, over which Sargent presided as Director from 1873 till the day of his death, produced in those years an astonishing and continuous flow of useful botanical literature. The mere list of the books, pamphlets and articles, of which Sargent was editor or author, covers eight pages in the last issue of the *Journal of the Arnold Arboretum*.

The greatest of these works was, perhaps, the *Silva of North America*, in fourteen huge volumes, the text by Sargent, and 740 plates, drawn by Faxon, and engraved on copper plates by the famous French artists, the two Picarts and Riocreux. The *Bradley Bibliography*, in five quarto volumes, comes next in importance, being a guide to the literature of the trees and shrubs of the world published up to the end of 1900. This was compiled under the direction of Sargent by Alfred Rehder. *Plantae Wilsonianae*, an enumeration of the trees and shrubs of Western China, was edited by Sargent and written by a team of able botanists, of whom Rehder and Wilson took the greatest burden. This book is indispensable to all arboriculturists. It may be seen from these examples how valuable have been the contributions of Sargent, Rehder, and Wilson to descriptive botany.

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* *Report of the National Institute of Industrial Psychology:* No. 2. An Investigation of Certain Processes and Conditions on Farms. National Institute of Industrial Psychology, 329, High Holborn. Price, 2s.

**Manual of Cultivated Trees and Shrubs*. By Alfred Rehder. New York. The Macmillan Company. 1927. Pp. xxxvii + 930. Price 2 guineas.

In the last fifty years, so great has been the number of trees and shrubs introduced into our parks and gardens from China, Japan, North America, Chili, Tasmania and New Zealand, that the need of a handy book for their determination has been urgent. Meritorious works on a large scale, such as Bean's valuable treatise in two volumes, were at our service; but a concise dendrology in an octavo volume, embracing all the trees and shrubs in ordinary cultivation in a temperate climate, did not exist in English. The Germans, as usual, were ahead of us, as they had Koehne's *Deutsche Dendrologie*, published in 1893, and, of course, now out-of-date, but still indispensable to students acquainted with the German language.

The Manual before us by Rehder surpasses Koehne's classic work in all respects. It includes all the latest introductions, and is encyclopaedic in its scope. It embraces 468 genera distributed amongst 112 families. The number of species fully described and represented in the keys is 2,350, with 2,465 varieties. Besides these, there are one family, thirty genera, 1,265 species and 507 hybrids only briefly described or mentioned and appended to the families, genera and species to which they are most closely related, or in the case of hybrids, to one of the parents.

The sequence of the families is according to the system used by Engler and Prantl in their *Natürliche Pflanzenfamilien*, and in Engler's *Syllabus*. This need not puzzle the amateur accustomed to the De Candollean arrangement, as the admirable Index, which is given pp. 861-930, will enable him at once to trace the genus or species to its proper page.

The international rules of botanical nomenclature have been followed, and therefore the names agree with those used in American books, such as the second edition of Bailey's *Cyclopedia of American Horticulture*. As this is the standard adopted in the main by the last edition of the *Kew Hand List of Trees and Shrubs*, published in 1925, conservative readers need not complain over much at the unfamiliar nomenclature occasionally employed by Rehder. The trouble with the Vienna nomenclature is its instability, and of this I may give a striking example. The old and familiar name of the Chinese "Tree of Heaven," is Ailanthus glandulosa, Desf. In 1925, the Kew Hand List quotes as correct Vienna Rule usage, the name Ailanthus cacodendron, Schinz and Thell. In 1927, Rehder adopts, also according to the Vienna code, another name, Ailanthus altissima, Swingle. Another ludicrous example of the effect of the Vienna code is seen in the use (p. 563) of Acer saccharum for the Sugar Maple, and (p. 576) Acer saccharinum for the Silver Maple, practically the same name for two absolutely distinct trees. The worst fault of the Vienna code, however, is the change, by which an old familiar name is transferred from one species to another species. Everyone knows the name Quercus rubra for the Red Oak. The new rule applies this Latin name to the totally different Spanish Oak (p. 167).

However, I need not linger on the vexed question of nomenclature. Unstinted praise may be given to the accuracy of the descriptions, the usefulness of the keys, the excellence of the paper and the clearness of the printing. I have only noticed one erratum: the word 'scarcely' is wrongly spelled on the sixth line from the foot of page 31. The proof-reading has been, indeed, most careful. The introduction (pp. i-xvi) explains the scope of the work, and justifies the nomenclature used. This is followed by two useful lists, one explaining the abbreviations of authors' names and the other the abbreviations of the references to illustrations. The year in which each species was introduced and its native country are invariably given. The two genera, Crataegus and Rhododendron, being extremely rich in species and varieties, have required special treatment, only representative and common forms being described. It is interesting to know that over 600 species of Crataegus are growing in the Arnold Arboretum, but only forty-two species are included in the Manual. His remarks on Rhododendrons, p. 679, are worth quoting:—"More than 400 species distributed through the colder and temperate regions of the northern hemisphere, also on the high mountains of South Asia and Malaysia and extending to New Guinea and Australia; twenty-six species known in North America, but none extending into Mexico. Many hybrids have originated in cultivation and make the classification and determination of the garden forms difficult. To give a fairly complete record of this ever-increasing number of hybrids is manifestly impossible within the scope of this Manual, and only the more important and better-known forms are mentioned. Also the many new species recently introduced from South-west China, and found only in a few large collections in England, whose hardiness within our area has not yet been tested have been omitted. Descriptions of most of them will be found in Millais, *Rhododendrons*, two vols. (1914-24)." Mr. Rehder wisely contents himself with giving a key for sixty-two species, followed by a careful description of each of these species, with mention of their hybrids, and in most cases mention also, with a short note, of allied species. Lately, while on a visit to the Edinburgh Botanic Garden, I enjoyed seeing the extremely rich collection of Rhododendrons there, and learned to my surprise, that about one million seedlings of numerous species were in cultivation in the gardens. The extraordinary richness of this genus in species, varieties and hybrids is extremely remarkable.

In conclusion, I congratulate Mr. Rehder on the production of this excellent manual, which should be useful to botanists, gardeners and foresters in every part of the world, outside the tropics. *A. Henry.*

THE POWDERY MILDEW OF FLAX.

In March last we received from Dr. A. W. Henry (an American pathologist who is on a visit to this country to study the diseases of Flax) a powdery mildew on the stem and leaves of seedlings of Flax (Linum usitatissimum) grown in a greenhouse of the Botany Department of the University of Cambridge. The plants were infested on both surfaces of the leaf, and more densely on the main stem. The characters shown by the fungus are illustrated in Fig. 17; the upright branches of the white mycelium bear oblong spores (conidia) which are produced either singly at the tip or in a chain of two or three. The size of the spore varies from 31—40 × 12—16μ, and the average size of forty spores measured was 34 × 14μ.

Just previously there had been published in the *Review of Applied Mycology*, IV, 125, 1927, a review of a paper by Dr. V. Škorić, on the Powdery Mildews of Croatia, stating that "on the Flax there was found an, up till now, unknown Powdery Mildew, but only in a conidial form." To this fungus the name Oidium Lini, n. sp., was given, and it was described as having oblong conidia, two or three in a chain, 26—41 × 12—15μ. Dr. Škorić adds the following note (for the translation of which we are indebted to the courtesy of Mr. S. P. Wiltshire, of the Imperial Bureau of Mycology): "Oudemans cites it on Flax (*Enum. system. fung., III*, p. 1017, Erysiphe communis (syn. E. polygoni)), but the fungus here described clearly differs from the above-mentioned by the size and shape of the conidia, and especially by the large fibrosin bodies."

Since the characters of the Powdery Mildew on Flax growing at Cambridge agree with those of Oidium Lini from Croatia, it might have been concluded that here was an instance of a new fungus finding its way from the Continent to England, but in mycology, as elsewhere, things are not always what they seem, and the student of the systematic classification of the Erysiphaceae (powdery mildews) is only too familiar with hosts of "bad species" that have appeared from time to time on the scene. In the present case it appears probable that an addition may have to be made to the list of "bad species," since the characters of this powdery mildew on Flax agree in all respects with the conidial stage of Erysiphe polygoni on certain host plants. Those interested in the subject will find illustrations of the conidial stage of this species in an article by one of us in the *Journal of Botany*, XLIII, 41, tab. 469 (1905). Mention is here made of the conidial stage of E. polygoni on Clematis, with its oblong-cylindrical spores measuring 28—42 × 14—16μ, produced occasionally in short chains.

We are indebted to Mr. W. C. Moore, of the Ministry of Agriculture's Plant Pathological Laboratory, Harpenden, for calling our attention to the record of Oidium erysiphoides (the name given to the conidial stage of species of the Erysiphaceae) on Linum usitatissimum in Rabenhorst's *Flora of Germany, Austria and Switzerland.*

In 1899, Professor P. Magnus gave a description of the powdery mildews occurring in the Tyrol, in which the following note occurs (kindly communicated to us by Mr. J. Ramsbottom): "Professor F. Wagner has collected an Oidium on Linum usitatissimum in a field of Flax much infested with it at Gries am Brenner, and has kindly communicated the fact to me. I do not find the occurrence of a powdery mildew on Flax recorded in any book. On the other hand, in the Herbarium of the Berlin Botanical Museum, there is an Oidium on Linum usitatissimum from Schnepfelthal in Thuringia, collected in September, 1869, which came from A. Brauns herbarium. This specimen is labelled Erysiphe lamprocarpa? Conidial stage. Very frequent on cultivated Flax. Judging by the handwriting, it may have come from A. de Bary. The mildew appears, therefore, to occur frequently on Flax." De Thueman (*Grevillea*, VIII, p. 49, 1879-80) has recorded the occurrence of Oidium erysiphoides on L. usitatissimum in Egypt (near Senura in Fajum). Lastly, Dr. F. Straňák, in a description of the diseases of Flax, states (*Ochrana Rostlin*, VI, 3, 37, 1926): "Under damp weather conditions, Flax may be attacked by the mildew Erysiphe polygoni, which on the leaves and stem forms a whitish powdery film, resembling flour."* It is not stated whether the identification was made from the conidial or the perithecial stage.

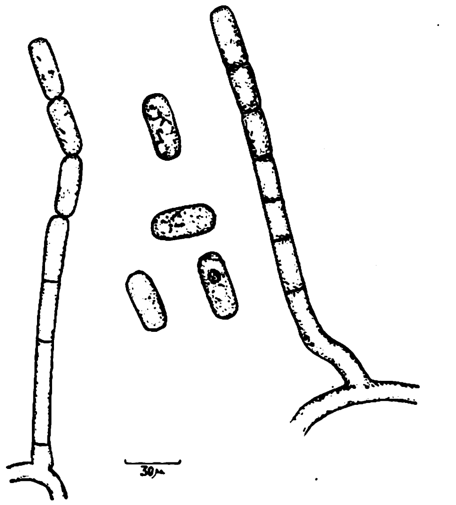

FIG. 17.—POWDERY MILDEW OF FLAX.

Two conidiophores bearing short chains of spores, together with free ripe spores × 250.

It appears, therefore, very doubtful whether the powdery mildew of the Flax has ever been found in the perithecial stage, and until this has been done, its name cannot be determined with certainty. All that can be said at present is that it agrees in its characters with the conidial stage of Erysiphe polygoni, and may possibly prove to be that species.

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* We are indebted to Mr. S. P. Wiltshire for kindly furnishing us with this translation.

Passing from the consideration of the correct name, we may now discuss the possible origin of the fungus and its relation to the control of the disease. Knowledge as to the name of the mildew might tell us whether it occurs also on other cultivated or wild plants. Even if this is so, it must not be assumed that the mildew can readily pass from its other hosts to Flax, since, in the family of powdery mildews, a strict specialisation of parasitism has taken place, the effect of which has been to restrict the range of each specialised form to members of the same, or a closely related, host-genus. If Dr. A. W. Henry now discovers the perithecial stage of the Flax mildew, and can also carry out experiments to ascertain if the conidia can infect other species known to be hosts of E. polygoni, he will confer a benefit on the country he is visiting, and the thanks of our agriculturists and horticulturists will be due to him.

We have not met before with the mildew on Flax in this country and we have not been able to find any record of such occurrence. We have been informed, both by Miss E. M. Wakefield and by Mr. J. Ramsbottom, that no specimen exists in the National Herbaria at Kew and South Kensington.

With regard to treatment of Flax mildew, it is probable that dusting with "flowers of sulphur," or finely-ground sulphur, will prove as efficacious as it is in the case of other powdery mildews. We would ask the readers of this Journal to keep a look-out for the powdery mildew on Flax, and to be good enough to send any specimens found to Dr. A. W. Henry, School of Botany, Cambridge. As pointed out above, for the complete identification of the fungus, the perithecial stage is required, and this may be present on material gathered in the summer or autumn. *E. S. Salmon and W. M. Ware, Mycological Department, South-Eastern Agricultural College, Wye, Kent.*

FRUIT GARDEN.

THE APRICOT.

OF all hardy fruits grown in Britain, perhaps the least success attends the culture of the Apricot. There are some very fine trees in existence, and some of considerable age, but usually the life of an Apricot tree is all too short. To state a definite reason for this comparative lack of success is not at all easy; as is well-known, branches, and occasionally whole parts of a tree will die without any apparent reason, and the one method of obviating this is to train in young growths, thus always having material at hand for covering bare spaces.

South-west and western aspects are best for the Apricot, at any rate, in the north; in the southern counties, trees in an eastern aspect have frequently produced crops of tolerably good fruits, but except under exigent circumstances, such a position should not be allotted Apricot trees.

The Apricot needs a calcareous, rich loam, but no manure; heavy soils may be improved by the addition of charred refuse or ashes from the garden fire. Very careful planting is most important; the roots should be arranged carefully and the interstices between them filled with fine soil to a depth of four inches. A mulch of long manure will serve to protect the roots from winter frost, and one of "shorter" material will protect them from summer's sun. The trees should be pruned in summer, retaining all shoots that are not too vigorous to be trained in for fruiting next year; continue to tie in the shoots as necessary throughout the summer. Winter pruning consists in removing badly-furnished or naked shoots, but branches should not be cut away; strong shoots of the previous season should be shortened to the ripened wood, and weakly growths about one-third their length. The lateral spurs should be retained, for they usually produce fruits, and especially in the variety Moor Park.

A knowledge of varieties is essential, as many sorts bear fruits on the shoots of the previous year, whilst Moor Park fruits on two- or three-year spurs, as do one or two other sorts.

Fan-trained trees are usually preferred, and cordons also prove successful; it is, however, only in very favoured districts where standards may be planted with hope of success. The Apricot is one of the earliest fruits to expand its blossoms, therefore protective material should be ready in case it is needed. It is important to remove all superfluous growths, so that in late summer the embryo fruit buds and the fruiting shoots may be exposed to all the sun available; persistent summer stopping of the growths is also highly important. The trees should be sprayed with water during the early summer, and this, with generous feeding of the roots, will greatly assist the fruits to swell. Apricots are successfully grown in orchard houses, and this, perhaps, is the most satisfactory method; pot trees commence flowering in a very young state. Forcing is not practicable, but the fruiting season may be forwarded a little by maintaining slightly warmer conditions in the house after the fruits have set, but prior to this stage a temperature of 45° will prove sufficient; after the stoning period, it should be raised to 50° to 55° but caution is necessary. The ripening period may be retarded by removing the trees in June to a cool position in the open, such as on the north side of a wall.

The Apricot, originally Abricock, was probably introduced into England during the reign of Henry VIII.

Moor Park is the best variety; the fruits of this sort ripen in August-September. The flesh is juicy, and the fruit of splendid colour. It may prove necessary to check the vigour of this variety by judicious root-pruning. This fine Apricot first appeared at Moor Park, Hertfordshire, in 1760, but whether it was raised there or introduced is not clear. The variety Royal ripens its fruits at the end of July; they are of moderate size, pale in colour with a deeper flush. It is a deliciously flavoured Apricot, and was raised in Paris in 1813. Frogmore Early ripens early, in mid-July; the small, round fruits are yellow with a red flush; the flesh is orange-coloured and of good flavour. This variety was raised at Frogmore in the seventies. St. Ambroise is a very large, late Apricot, of agreeable flavour.

Excellent hardy varieties are Luizet, ripening in mid-July; Blenheim, which ripens a fortnight earlier than Moor Park; Breda, the hardiest and best variety for cultivation as a standard, and Hemskirk, which is very like Moor Park, but said to be of stronger constitution. Pêche de Nancy is a fine variety, ripening in early August. The fruits are of fine colour, large in size, and rich in flavour. This sort is not subject to mealy flesh, a common fault with Apricots if allowed to hang until they are quite ripe. *Ralph E. Arnold.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

The Fruit Crops.—It would be interesting if those who send notes on the fruit crops would state which varieties escaped damage by the severe frost of April 27, and the names of those that were almost or entirely spoiled, with any further particulars that may appear necessary. Frost was general on this date over a large part of the Kingdom and occurred when the majority of Apples, Pears and Plums were in bloom or the flowers on the point of opening, throughout the southern districts. In my garden it is remarkable how well Fearn's Pippin Apple escaped damage and set a large crop; this Apple may be hardier than others and still worth planting for that reason. About half the flowers were fully open when the frost occurred. The same remarks apply to James Grieve; other varieties that had no flowers expanded were Cox's Orange Pippin, Lane's Prince Albert and Newton Wonder. Trees of these sorts are carrying good crops. The worst failure is Bramley's Seedling, and I have heard other complaints about that variety; another bad case is Raspberry Lloyd George, but Laxton's Bountiful and the Hailshamberry have splendid crops and the berries are swelling freely. Black Currants are also doing remarkably well. Pear trees were in flower when the frosts occurred and the crop failed entirely. There are numbers of very large Williams' Bon Chrétien Pear trees in this parish, which flowered very freely and had shed their blossoms before the frost came, but scarcely one fruit can be found on them. *W. H. Divers, V.M.H., Westdean, Hook, Surbiton.*

Orchis foliosa × O. maculata.—With reference this plant, which was described by Mr. Boyd, on p. 431, vol. LXXXI, it may be of interest to your readers to know that it originated here as a natural cross on the banks of the lake. The plant at Kew is the one I sent, and the late Mr. Rolfe wrote me a very full detailed report of the hybrid. About twelve plants appeared, varying considerably in their relation to the parents. The plant sent to Kew was most typical of both parents. Some of the hybrids have no spots on the leaves, the dual character appearing in the shape of the leaves and flowers. Orchis foliosa was probably the seed parent, as the hybrids appeared in close proximity to that species and the few plants of O. maculata were some distance away. *A. Buchan-Hepburn, Smeaton, East Lothian.*

FOREIGN CORRESPONDENCE.

THE ORIGIN OF GLADIOLUS PRIMULINUS HYBRIDS.

THE very interesting article by Mr. James Kelway on the Gladiolus has greatly interested me. In general, we know too little of the origin of our cultivated plants, and therefore the information he gives is very welcome. He states that Messrs. Kelway and Son exhibited in 1912, for the first time, their Gladiolus primulinus hybrids in England; at the same time, Messrs. E. H. Krelage and Son brought their primulinus hybrids before the Committee of the Dutch Bulb Growers' Society, at Haarlem. The hybrids of both firms are thus of the same year.

Messrs. Krelage and Son bought, about 1910, from the late Max Leichtlin, some corms and seeds of crossings between Gladiolus primulinus and the larger-flowered Gladiolus. In my opinion Mr. Leichtlin crossed G. primulinus and Lemoinei-varieties, as his hybrids had thin, straight stems, and the characteristic hooded form of G. primulinus. The hybrids between G. primulinus and G. gandavensis have, on the whole, thicker stems and more open flowers while the flowers are set at a shorter distance on the stem.

In two years Messrs. Krelage had grown a fine collection of the first hybrids of Mr. Leichtlin, and as has been stated, in 1912, they were put before the Committee of the General Dutch Bulb Growers' Society, at Haarlem. After 1912, Messrs. Krelage made many crossings between G. primulinus, Lemoinei and nanceianus hybrids; between 1914 and 1922 no fewer than forty-five Gladiolus primulinus hybrids of Messrs. Krelage received Awards of Merit or First Class Certificates at Haarlem. Many of Krelage's hybrids are now grown in England, for instance: Eurydice, pale coral rose; Hermione, salmon-orange; Laetitia, orange-pink; Niobe, reddish orange; Salmonea, bright salmon-orange; and Scarletta, rich scarlet.

Another Dutch firm which raised many primulinus hybrids is Messrs. J. J. Grullemans and Sons, Lisse. Their hybrids are nearly as old as those of Messrs. Kelway and Messrs. Krelage. On the whole, Messrs. Grullemans' hybrids are larger-flowered, and include some fine sorts; for instance: Maiden's Blush, blush rose; Mrs. Grullemans, pure golden yellow; Orange Brilliant, brilliant orange-buff; Rose Luisante, rose; and Sunrise, salmon-rose.

The English- and the Dutch-raised primulinus hybrids form together first-class material for garden decoration and vases. *J. F. Ch. Dix, Heemstede, Holland.*

SOCIETIES.

NATIONAL ROSE.

July 1 and 2.—For many years the Metropolitan summer show of the National Rose Society has been held in the Botanic Gardens, Regent's Park, but this year it was held in the grounds of the Royal Hospital, Chelsea. It was unfortunate that the change of venue should have coincided with such unfavourable weather conditions, for rain fell on the opening day to such an extent that the ground, both inside and outside the tents, became flooded with water long before the show was opened to the public, and after the visitors were admitted the conditions were unpleasant in the extreme. In spite of this, however, the show was a great success, for the quality of the blooms, considering the season, was exceptionally good, and the attendance very satisfactory. There was nothing very striking amongst the new varieties, but the Society's Gold Medal was awarded to two new seedlings, one of which has been seen on previous occasions. During the afternoon of the opening day the show was visited by Queen Mary, and another notable visitor was Princess Louise, Duchess of Argyll, who presided at the annual meeting of the Women's Farm and Garden Association.

AWARDS.

Gold Medals.

Lady Forteviot.—In this large, broad-petalled Pernetiana variety, the dark, bronzy-green and shining foliage forms a fine setting for the brilliant orange-gold blooms. The flowers are scented and carried on stiff stems, so it should make a useful garden and bedding variety. Whether its very wide and not too plentiful petals will permit it to withstand wet weather without flopping and losing its orange tint remains to be seen. In regard to colour and robustness it is excellent. Shown by Messrs. Benjamin R. Cant and Sons.

Everest.—A broad-petalled Hybrid Tea Rose of full exhibition size, but practically scentless. The big blooms contain an abundance of petals and should spread beautifully in kindly weather. The colour is clear creamy-white. Shown by Messrs. W. Easlea and Sons.

Certificates of Merit.

Elizabeth of York.—A charming Hybrid Tea Rose of lovely colour and pleasing form. It was exhibited as a garden variety, and should be first-rate for this purpose. It has not a sufficient number of petals to make it a successful exhibition variety, but, nevertheless, its colour will, no doubt, find it a place occasionally on exhibition boards. The petals are wide and roll back a little as the blooms open. The colour is bright, clear, soft orange-cerise, the outer petals fading a little to rose as the blooms become fully expanded. Grown on the Rosa laxa stock. Shown by Messrs. Dobbie and Co.

Bernice.—A strong-growing Rose apparently of suitable shape for exhibition and garden purposes. The growth is vigorous and the large, shapely blooms are borne on stiff stems. The wide-petalled blooms are a lovely shade of peach-pink with a glow of yellow which is given by the shading of the colour on the outsides of the inner petals. This is a Hybrid Tea variety, but we could detect no fragrance in it. Shown by Mr. J. H. Pemberton.

Sunshine.—This is a very distinct, perpetual-flowering, dwarf, Polyantha Rose, with dark, neat foliage, excellent habit and freedom of flowering, many of the trusses carrying from a dozen to eighteen flowers. The colour is a pleasing shade of soft, orange-tinted yellow, very much the same shade as seen in the old Wm. Allen Richardson. Shown by Messrs. Wm. Cutbush and Son.

Chin Chin.—As a free-flowering, multiflora variety this should prove popular with growers. The habit is robust, and the single, light pink, pale gold centred flowers are daintily pretty. The blooms are borne on large, elegant sprays. The pale gold stamens add to the beauty of this variety. It is pretty in all but name, and we believe that the name has been used previously. Shown by Messrs. F. Cant and Co.

Other New Varieties.

Golden Gleam.—A very bright, golden Pernetiana variety shown by Messrs. G. Beckwith and Son, was very attractive, and Billy Boy, from the same firm, appears to be exceptionally free-flowering and robust.

Bedford Crimson.—From Messrs. Laxton Bros., arrested everyone's attention by reason of its strong and delicious fragrance.

Unique, fawny-orange, with light green foliage, shown by Mr. F. Evans, Reading, appears to be of climbing or pillar habit, carrying its flowers singly on the side branches; it was exhibited as a hybrid, climbing Polyantha variety, and is certainly very distinct, especially as the calyx segments are deeply divided, almost suggesting Moss-Rose ancestry.

Messrs. Chaplin's variety named Waltham Cross is a bright, crimson-scarlet, semi-double Hybrid Tea Rose with very pleasing fragrance. The dark foliage and attractive colouring should make this a useful bedding variety.

Lily Kemp, very sweetly scented and of pretty shape in the bud, attracted our attention; the colour is orange tinted rose.

Nurserymen's Classes.

Following the recent custom, the large trade groups of Roses were displayed on separate tables in the centre of a large tent. In this manner they made a most effective spectacle. Appropriately enough, the Championship group happened to be in the middle of the tent. There were three classes altogether for groups of Roses, so that the trade growers of different degrees might meet together in friendly competition, and the handsome group set up by Messrs. Alex. Dickson and Sons was not only the finest in its class, but the best, irrespective of size, in all three classes, and well worthy of winning the Championship Trophy and the Edward Mawley Memorial Medal which was offered for the most meritorious exhibit in the Nurserymen's classes. It was a most pleasant arrangement of pillars and baskets of Roses of really good quality. In the centre of the group the chief varieties were Shot Silk, of delightful colouring, Betty Uprichard, Lady Hillingdon, Sunstar and Lady Inchiquin. The corner pillars were massed with fresh blooms of Paul's Scarlet Climber, Irish Elegance, Betty Uprichard and Lady Helen Maglona, while in the baskets there were Madame Edouard Herriott, Irish Fireflame, Red Letter Day, Lady Worthington Evans and Golden Emblem.

The second prize in this large group class was won by Messrs. Chaplin Bros., who displayed on their corner pillars beautiful blooms of Betty Uprichard, Madame Edouard Herriott, Shot Silk and Emma Wright. Amongst their well-filled baskets there was a beautiful arrangement of Mrs. Herbert Nash. Other varieties which helped to make this display attractive were Princess Elizabeth of Greece, Golden Emblem, Pearl White, Los Angeles and Ophelia. Messrs. B. R. Cant and Sons were third in this important class, and their display was also composed of baskets, pillars and vases of good Roses. The chief varieties were Golden Emblem, Shot Silk, Lady Roundway, Gwyneth Jones, Lemon Pillar, Sunstar and Mabel Morse.

In this largest class of the show, attractive groups were also set up by Mr. Elisha J. Hicks, Messrs. Waterer, Sons and Crisp and Mr. J. H. Pemberton. Messrs. Waterer, Sons and Crisp showed handsome vases of Shot Silk, K. of K., Mrs. Henry Morse, Hortulanus Budde, Los Angeles and Violet Stevenson, a new rich yellow Rose of considerable merit. The chief sorts displayed by Mr. Hicks were Betty, Mrs. H. Stevens, Lady Hillingdon, Clovelly, Marechal Niel, and Joanna Bridge. Mr. J. H. Pemberton had an attractive group composed chiefly of his free-flowering varieties.

In the class for a medium-sized group of representative Roses the quality was equally as high as in the large class. The best group was arranged by Mr. George Prince, and his centre of Paul's Scarlet Climber surrounded by Betty Uprichard, Allan Chandler, Emma Wright, Lady Inchiquin and Golden Emblem was very effective. He also showed the fragrant Marcia Stanhope, Shot Silk and Mrs. Henry Morse in great beauty. Messrs. Walter Easlea and Sons, were second, and their centre was a basket of Betty Uprichard raised high, and surrounded by mounds of Madame Melaine Soupert, Hawlmark Crimson and James Walley. At the corners they had Madame Edouard Herriott, Henrietta, Lamia and Lady Pirrie. The third prize was won by Mr. James Mattock with a well-arranged group of good garden Roses.

In the class for a group of Roses arranged on a table measuring six square feet, the first prize was won by Messrs. Jarman and Co. with a wholly admirable display. In the centre they had generously filled baskets of Phyllis Bide, General McArthur and Lieut. Chaure, while the corner pillars were massed with blooms of Mabel Morse, Ophelia, Cupid and Mrs. Henry Morse. Mr. George Lilley, who was second, had a tall, central stand of Paul's Scarlet Climber, with lower pillars of Shot Silk, Betty Uprichard and Los Angeles. The varieties Lady Pirrie, Christine and Hortulanus Budde were also well shown. Mr. David Long was third.

The class for twenty-four distinct varieties shown in vases was intended to illustrate the foliage and habit of growth of each variety. Messrs. Morse Bros. were decidedly first, and they had excellent vases of Admiration, The Queen Alexandra Rose, Shot Silk, Betty Uprichard, Lady Pirrie and Lord Charlemont. Mr. Frank Spooner was second, and his best varieties were Mabel Morse, The Queen Alexandra Rose, Madame Butterfly, Marcia Stanhope and Gorgeous. Mr. Henry Street, in his third prize exhibit, had good specimens of Betty Uprichard, Christine and Lamia.

Although the Roses in baskets were not so numerous as on most former occasions, the quality generally was very good. Only Mr. Henry Drew exhibited seven baskets of decorative varieties, and he was awarded the first prize for a meritorious exhibit which included baskets of Betty Uprichard, Mrs. Courtney Page, Lady Inchiquin and Mrs. Henry Morse. Messrs. A. Warner and Son were first with three excellent baskets of decorative Roses, showing Hortulanus Budde, Mrs. Henry Morse and Golden Emblem. The three baskets of Polyantha varieties which won the first prize for Messrs. Wm. Cutbush and Son were beautifully coloured; the varieties were Locarno, Frank Leddy and Golden Salmon. Messrs. Morse Bros. were second with well-flowered baskets of Redhatte, Gwyneth Jones and Lady Reading. Mr. Elisha J. Hicks was third, and he had a fine basket of Glory of Hurst.

Exhibition Roses.

Although the effects of the recent inclement weather were apparent in occasional damaged petals, they were fewer than might have been expected, and the quality generally of the exhibition Roses must have been gratifying to the Society. The Championship collection of exhibition Roses was set up by Messrs. B. R. Cant and Sons, who won the coveted China Trophy. Their forty-eight distinct varieties included Mildred Grant, Mrs. Courtney Page, Lemon Pillar, Robert Hewitt, Edgar M. Burnett, Modesty, Nellie Parker and Colcestria. Messrs. Frank Cant and Co., who were second, had very fresh blooms of Edith Cavell, Lady Inchiquin, Mabel Morse, Courage, Rev. F. Page Roberts and Lord Charlemont. In their third prize exhibit, Messrs. G. Longley and Sons showed good blooms of Mrs. Henry Morse, Mildred Grant, Lemon Pillar and The General.

Messrs. Jarman and Co. followed their success in the group class by winning the first prize for twenty-four varieties with exceedingly good specimens of Mrs. Elisha Hicks, Edgar M. Burnett, H. V. Machin, Mrs. J. Laing, Lady Inchiquin and Candeur Lyonnaise. Second prizes were awarded to Mrs. Elisha J. Hicks and to Mr. George Prince. The latter included beautiful blooms of Shot Silk, Frau Karl Druschki, Madame Jules Gravereux and Mabel Morse, while the best blooms of the former were George Dickson, the best bloom in the division; Capt. Kilbee Stewart, Earl Haig and Florence Forrester. Mr. Henry Drew was third.

The collections of Tea and Noisette Roses were of better quality than might have been expected. Messrs. G. Longley and Son were first with a fresh collection of Auguste Comte, Madame Hoste, White Maman Cochet, Hugo

Roller and Constance Soupert. In Mr. Henry Drew's second prize exhibit there was a highly-coloured bloom of Auguste Comte, and he also included the pink F. Von Marshall, Lady Plymouth, W. R. Smith and White Maman Cochet. Mr. George Prince was third, and his best varieties were Mrs. Ada Rothschild, White Maman Cochet and Molly Sharman Crawford.

The classes for Roses of recent introduction rarely contain blooms of outstanding merit, and the present show was no exception to the rule. The best twelve blooms of varieties distributed since the beginning of 1923 were shown by Mr. Henry Mattock, whose finest blooms were Maud Cuming, Dr. A. J. Petyt, Betty Hulton and Gwynne Carr. Mr. E. Hicks was second, and his best specimens were Clovelly and Mrs. C. Edwards.

The twelve blooms of any one variety of new Rose were of better quality, and Messrs. B. Cant and Sons were first with beautiful blooms of the fragrant Mrs. Beatty and Mr. Elisha Hicks was second with the pink Clovelly. Frau Karl Druschki, shown by Messrs. Jarman and Co., was the best basket of H.P. Roses, and the same variety, shown by Mr. Elisha Hicks was the second best. A handsome basket of Mrs. Henry Bowles, shown by Messrs. Jarman and Co, was the best of eight H.T. varieties, while Mrs. Henry Morse, set up by Messrs. G. Longley and Son was second. The Brayfort Challenge Cup was won by Messrs. Morse Bros., who had a beautiful basket of Shot Silk. Messrs. A. Warner and Son were second with Lady Inchiquin of very good quality, and Mr. Henry Drew was third with the same variety. The Nickerson Prize, which is offered for the best British or American Rose distributed between June 1, 1920, and the end of December, 1925, was won by a lovely stand of Shot Silk, shown by Messrs. A. Warner and Son. There were seven very good exhibits in the class, and the other varieties included Betty Uprichard, Mrs. Henry Morse, Rev. F. Page Roberts and Lady Roundway.

Amateurs' Classes.

The Amateur rosarians fully upheld their high reputation at this show and, although some members were obliged to cancel their entries through storm damage to their blooms, there were many exhibits of considerable excellence.

The groups of representative Roses were admirable, and the Champion Trophy was won by G. W. Hart, Esq., Potters Bar, with a wholly admirable collection of Roses which were of high quality and arranged with great taste. In the centre he had a magnificent basket of the richly coloured Etoile d'Hollande and also set up very meritorious vases of Mrs. Tresham Gilbey, Lady Inchiquin, Souvenir de Madame Bouillet, Shot Silk and Isobel. The second prize was won by Dr. R. C. Turnbull, Colchester, also with a collection of good quality Roses. He included Isobel, of great beauty. W. E. Burgess, Esq., was third in this important class. Only H. R. Darlington, Esq., Potters Bar, exhibited a group of cut Roses on a space measuring four square feet, and he was awarded the first prize for a good collection of unnamed varieties.

There were many really good exhibits of Roses in baskets. The first prize for two baskets was awarded to T. N. Burgess, Esq., who showed Mrs. Henry Morse and Lemon Pillar of high quality. W. E. Moore, Esq., was first with one basket of Roses in the class for small growers. In the section for Amateurs who grow their Roses unaided, the best of many baskets of any one variety was that of Mrs. F. Gilbey, shown by H. Robins, Esq., Ingatestone, Essex, while W. A. Nightingale, Esq., Wallington, and A. H. Fowler, Esq., Newbury, were similarly successful in the classes for those who grow limited numbers of plants.

Six competed in the class for twelve vases of distinct varieties, in which the "Mattock" Cup and £2 were offered as the first prize. It was an excellent contest and many beautiful Roses were shown. The first prize was won by Mr. G. Marriott, Carlton, Nottinghamshire, with glorious blooms of K. of K., Los Angeles, Madame Edouard Herriott, Queen Alexandra, Golden Emblem, Hoosier Beauty and May Marriott; second, Mr. R. H. Ling, Berkhamsted, whose choicest varieties were K. of K., Betty Uprichard, Lamia, Madame Butterfly, and Vesuvius.

The Holroyd Cup was offered for six distinct varieties in vases, and it was won by Mr. A. L. F. Cook, Hayes, with a bright exhibit of such sorts as Sunstar, Lemon Pillar, Etoile d'Hollande and Emma Wright; second, Mr. R. H. Ling.

In the class open only to growers within ten miles of Charing Cross, exhibitors from Finchley won the first and second prizes, Mr. E. Holroyd and Mr. A. E. Griffith, respectively. Mr. Holroyd had good specimens of Emma Wright, Betty Uprichard. Los Angeles, Lady Pirrie, Madame Butterfly and Ivy May.

With grand vases of Mrs. E. J. Powell, Los Angeles, Moonlight and Col. Oswald Fitzgerald, Mr. H. Robins, Ingatestone, won the first prize in the class for six distinct varieties, open to those who grow their own Roses; second, Mrs. H. Cribb. Mr. S. E. Tattershall won the first prize in a similar class open only to those who grow fewer than 250 plants.

Mr. C. H. Rigg, St. Albans, won the Mawley Challenge Cup offered for twenty-four blooms, distinct. His blooms were shapely and well coloured, of such sorts as Mabel Morse, J. G. Glassford, Bessie Chaplin, Avoca, George Dickson and Earl Haig; second, Mr. F. H. Fieldgate. Mr. Rigg also excelled in the class for two baskets of cut Roses with excellent blooms of Lady Inchiquin and Mrs. Henry Morse. Mr. W. E. Moore, Ickenham, beat the Rev. F. Burnside in the class for twelve blooms, distinct, in which the Lamplough Challenge Cup was offered. It was a splendid collection and the finest varieties were John Russell, Mabel Morse, Lord Charlemont, J. G. Glassford, Mrs. Henry Bowles and Candeur Lyonnaise.

A basket of Mrs. Henry Bowles, shown by Rev. F. R. Burnside, Stambridge Rectory, Essex, was adjudged the best exhibit in Class 44. The Ben Cant Memorial prize, offered for twelve blooms, distinct, shown by growers of fewer than 500 Roses, was won by Mr. E. W. Turner, Herne Bay.

Artistic Classes.

A special tent was allotted to the various exhibits of decorated dinner tables, baskets of Roses, vases of Roses and bowls of Roses, arranged from an artistic point of view; the exhibits were sufficient to fill the available space and made a very attractive feature of the show. Three classes were included in the nurserymen's section, and eight in the Amateurs' division, the latter being open only to ladies. Whilst the exhibits generally were very meritorious, there was nothing strikingly original in arrangement and quality of material was often the deciding factor in making the awards. The range of varieties was not very wide, and the prizes were mostly awarded to exhibits of such Roses as Ophelia, Madame Butterfly, Roselandia and Richmond, which are popular market sorts for the cut flower trade.

Mrs. C. A. Tisdall, Woodford Green, excelled in the nurserymen's section for a dinner table decorated with cut Roses arranged with Rose foliage only. She had most glorious blooms of Roselandia arranged with beautiful sprays of Rose foliage, but we considered that the centre bowl was a trifle crowded. Mrs. A. Bide, Farnham, was placed second for a decoration of the unique coloured I. Zangari, the petals of which are deep reddish-orange on a gold base, the under-surface being nearly all gold. The unopened buds are very dainty. Mrs. Chaplin contributed a charming exhibit in which Madame Butterfly Roses were used.

Mrs Tisdall also excelled in the class for a bowl of cut Roses, with the variety Richmond, and she showed the best basket of Roses, lightly arranged with Rose foliage only.

In the amateurs' section, six competed in the class for a table decorated with single Roses, and Mrs. L. Colston-Hale, Warminster, was placed first for an arrangement consisting of two small centre bowls and four corner vases filled with Cupid and Irish Elegance in association. The effect was good, but even on the afternoon of the first day the individual flowers showed signs of deteriorating.

Mrs. Oakley-Fisher, Sunbury, utilised the beautiful, deep apricot variety bearing her name to good effect, and was awarded the second prize, while Mrs. Courtney Page followed with an arrangement of Dainty Bess, a charming pink single Rose, but the clusters are rather heavy for a bowl; a little disbudding of the trusses would probably give better material for vases and bowls.

Mrs. Courtney Page excelled easily in the class for a table of Roses other than single, and her blooms were equal in quality to any in the show. The variety was Roselandia; the arragement was bold and imposing—such beautiful flowers could not appear otherwise—and she employed just sufficient greenery to add grace and finish to the design. Second, Mrs. F. Charlton, Yiewsley, with an arrangement of Madame Butterfly Roses, the quality of which was of the highest merit; third, Mrs. A. D. Ruff, Sharnbrook, who also utilised Madame Butterfly.

The Nickerson Prize of a piece of plate valued at £10 was offered for a decorated dinner table, open only to amateurs who grow and stage their own flowers. This was a well contested class, but the blooms fell far short of the glorious quality of those in the preceding class, the source of which was not revealed. Miss E. Griffiths, Finchley, won with a dainty arrangement of Betty Uprichard, a Rose of glorious colouring, and they were splendid specimens; second, Mrs. Courtney Page, with Emma Wright.

The best basket of cut Roses was shown by Mrs. Courtney Page, whose flowers of Madame Butterfly were of extraordinary fine quality; second Miss M. E. West, Reigate, with the variety Richmond.

Mrs. Courtney Page also excelled in the class for a bowl of mixed Roses in which seven competed.

Miss M. Woolman is to be congratulated on her great success as a new competitor in these classes, for she showed the best basket of cut Roses, the basket provided by the Society; the best decorated dinner table in a class open only to those who have never won a first prize in this section; and the best bowl of cut Roses in a class with similar conditions. In each class her success was outstanding.

ROYAL HORTICULTURAL.

July 6.—When the arrangements were made it was hoped that Cherries would have been the special feature, but the season has been unfavourable, and it chanced that Delphiniums were the dominant feature of the show. Roses were also shown by several growers. The Clay Cup, which is offered for a Rose of good form and colour, not in commerce before the current year, and possessing the true old Rose scent, brought a number of sweetly-scented varieties. The Cup was awarded to the variety Abol, which was selected for trial at Wisley on June 25 last. Abol is a well-formed H.T., fully double variety, of milk-white colour, with a flesh-pink centre, and is deliciously scented. The variety was shown by the Chalk Hills Nursery Co. An interesting collection of fruiting Cherries in pots was shown by Messrs. George Bunyard and Co.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. S. Flory, Mr. A. Dye, Mr. Fred. Sander, Mr. H. G. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. J. Cowan, Mr. Robert Paterson, Mr. T. Armstrong, and Mr. R. G. Thwaites.

Award of Merit.

Miltonia gattonensis var. Albatross (*Bleuana × Charlesworthii*).—A very beautiful variety with large white flowers. At the base of each petal there is a tiny mauve stain, and on the lip, the dull yellow mask has three central red-brown radiating points. Shown by Messrs. Charlesworth and Co.

Groups.

Messrs. Charlesworth and Co. contributed a very bright exhibit of about eighteen plants, and made a feature of Miltonia gattonensis, M. Lycaena, M. William Pitt, M. Venus, Cypripedium Solon (Rothschildianum × tonsum)

Odontoglossum St. Mungo, Odontioda Patricia Ramsey and O. Nesta var. maculata, a handsome form with red-brown markings in the large, flat lip.

Cypripedium bellatulum was well shown by Messrs. Sanders. Vanda suavis was also good, and other interesting subjects included Coelogyne Massangeana, with pendulous spikes, Odontoglossum Insleayi aureum, Cypripedium niveum, the yellow Lycaste cruenta, Dendrobium infundibulum, Odontoglossum citrosmum and Brassavola Digbyana.

Messrs. Stuart Low and Co. showed a fine-flowered specimen of Cattleya gigas and good examples of L.-C. Aphrodite, Brasso-Laelio-Cattleya Burleigh Bray, and some new Odontiodas as yet unnamed.

Messrs. H. G. Alexander, Ltd., exhibited a plant of Laelio-Cattleya Queen Mary var. fulgens, with three large, perfect, fragrant flowers of mauve-purple colouring, and ruby and purple lip. Messrs. Black and Flory showed Miltonia Sanderiana and M. Kennie var. Princess Elizabeth in which the deep chocolate-red mask almost covers the lip.

Cypripedium californica, a hardy, terrestrial Californian species, carrying five small, white flowers reminiscent of C. Schlimii, was shown by Mr. Amos Perry, Enfield, to whom the Committee awarded a vote of thanks for sending such an interesting plant.

Floral Committee.

Present : Section A.—Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mr. H. J. Jones, Mr. William Howe, Lady Beatrix Stanley, Mrs. Ethel M. Wightman, Mr. James B. Riding, Mr. A. E. Vasey, Mr. R. Findlay, Mr. D. Ingamells, Mr. J. T. West, Mr. W. B. Gingell, Major George Churcher, Mr. D. B. Crane, Mrs. Helen Lindsay-Smith, Mr. H. R. Darlington, Mr. Charles E. Pearson and Mr. W. D. Cartwright (Secretary).

Section B.—Mr. Gerald B. Loder (in the chair), Mr. James Hudson, Mr. G. Reuthe, Mr. Amos Perry, Mr. F. G. Preston, Mr. W. B. Cranfield, Mr. Reginald Cory, Mr. Mark Fenwick, Mr. C. Williams, Mr. T. Hay, Sir William Lawrence, Bt., Mr. E. H. Wilding, Mr. R. C. Notcutt, Mr. Charles T. Musgrave, Mr. E. A. Bowles, Mr. Clarence Elliott, Mr. N. K. Gould (Secretary), and Dr. Rendle and Mr. Coomber, Junr., (as visitors).

AWARDS OF MERIT.

Phlox argillacea.—This is stated to be a new species from Michigan. It is a dwarf, free-flowering plant, about eighteen inches in height. The leaves are quite small and narrow, and the plant bears spreading, branched heads of small, very pale lilac flowers which have darker tubes. Shown by Mr. T. Hay, Hyde Park, London.

Onosma Hookeri.—This is an attractive, dwarf "Borage." The whole plant, including the flowers, is furnished with harsh hairs. The leaves are long and narrow, and the tubular purple flowers are borne in branched cymes. Shown by Lt.-Col. Messel, Nymans, Sussex.

Mutisia retusa var. glaberina.—The Mutisias are of doubtful hardiness, and we suspect that it is only in favoured gardens that the above variety can be grown. It is of climbing habit; the evergreen leaves are stout and undulated, stemless, and the apex is prolonged into a wiry tendril which twines around any convenient support. The large, Daisy-like flowers are three inches across and of pale blush colour, with a small cluster of purple and yellow stamens. Shown by Sir William Lawrence, Bt., Burford, Dorking.

Nuttallia cerasiformis.—This hardy, deciduous, Californian shrub is usually monoecious, and the award was given to exceptionally well-fruited branches of a female bush. It is one of the earliest of the hardy shrubs to flower and, although not very pronounced, the flowers have a very pleasant Almond-like fragrance. The oval fruits are pale yellow at first and become a dark plum-purple when ripe, when a well-fruited specimen is very attractive. Shown by the Botanic Garden, Cambridge.

Rose Everest.—(See National Rose Society's Awards, p. 36). Shown by Messrs. Walter Easlea and Sons.

Delphinium Mrs. Foster Cunliffe.—A beautiful spike of large double flowers of delicate lavender colour with an occasional blue petal.

Delphinium Howard H. Crane.—Another handsome variety of blue and mauve colouring, with a white centre. Both varieties were shown by Messrs. Blackmore and Langdon.

Rose Atalanta.—A very attractive, free-flowering Rose which was obtained by crossing Paul Ploton, an old Wichuraiana variety, with William Allen Richardson. It has attractive, shining green foliage and bears good trusses of double flowers about three inches across. The flowers are pale salmon in colour when first open, and change to a pretty pale pink blush. It is a pleasantly fragrant variety suitable for training against a pillar or for growing as a weeping standard. Raised and shown by Dr. A. K. Williams.

Begonia Mrs. Ward.—A magnificent double flowered, tuberous-rooted variety with handsome foliage. The very large, perfectly double flowers have broad, substantial petals of bright pink colour.

Begonia Sir Philip Sassoon.—This is a fitting companion to the foregoing, and it also has handsome leaves. The flowers are of vivid crimson colour, and the petals are waved and lightly serrated. Both were shown by Messrs. Blackmore and Langdon.

For Trial at Wisley.

Delphinium Rosetta.—This appears to be a useful garden variety. The single flowers are rather loosely arranged and of bright blue colour, margined with mauve. Shown by H. G. Rayment, Esq., Arcadia, Harpenden.

GROUPS.

Several large exhibits of Delphiniums made an imposing display. Messrs. Blackmore and Langdon again brought most magnificent spikes which they set up admirably. On this occasion they included several of their novelties, such as Lady Augusta, a rich blue self with a black and gold eye; Lady Edith, a robust and stately spike of very large, semi-double lavender flowers with a dark eye; and the two varieties, which received Awards of Merit. Messrs. Hewitts, Ltd., staged good spikes of The Shah, Mrs. Townley Parker, Monarch of Wales, Lorenzo de Medici and The Alake.

In his attractive collection, Mr. T. Carlile had tall spikes of G. Cochrane, Blue Boy, Prince Gustav and Lord Derby, and also used many vases of excellent Gaillardias. Mr. T. Bones had a large group of Delphiniums in which he displayed several of his good seedlings with Lord Derby, Clarissa, sky-blue, Star of Langport, pale blue, Rev. Charles Storr, a medium shade of blue, and The Alake. Messrs. G. and A. Clark showed hardy border flowers in variety, including Delphiniums, Scabious and Malva moschata. Messrs. M. Prichard and Sons set up a good miscellaneous collection of hardy flowers and alpines. They had vases of Iris Kaempferi varieties, Gladiolus Colvillei, Verbascum Wiedmannianum, Sempervivums and Mesembryanthemums. Some pretty Mesembryanthemums were planted by Messrs. L. R. Russell, Ltd., in a rock garden exhibit. They had M. Brownii and M. turbinata rosea and also displayed Oenothera riparia and O. speciosa.

A long stretch of tabling was filled by Mr. F. G. Wood with a skilfully arranged collection of border flowers and alpines. He included several very attractive varieties of Mimulus and dwarf Campanulas, Verbena venosa, Primulas, Nierembergias and Digitalis aurea. The Misses Hopkins grouped Sweet Williams, Alstroemerias, Lychnis chalcedonica and Violas.

Mr. Amos Perry had a valuable exhibit of uncommon bog and border plants. He showed Lilium Hansonii, L. Parryi, Brodiaea laxa, several good varieties of Ixia, Calochortus, Iris aurea, I. Monnieri, Tritomas and Sparaxis. Messrs. Tuckers, Ltd., had a rock garden planted with dwarf Campanulas, Genista tinctoria fl. pl., Oenothera riparia and other appropriate plants. On a large table space, Messrs. B. Ladhams, Ltd., displayed large masses of Coreopsis imbricata, Erigerons, Lavatera Olbia, Campanulas, Alstroemeria haemantha, B. Ladhams and Iris laevigata varieties.

Just inside the entrance, Messrs. Waterer, Sons and Crisp had a superb exhibit of Japanese Irises arranged in front of an appropriate background of Bamboos and Astilbe Aruncus. The Irises included such good varieties as Mrs. Stanley, Olympus, Helena, Attraction, Jupiter and Adonis.

Roses of good quality were shown by several growers. Messrs. Frank Cant and Co. included vases of Golden Emblem, Mrs. Henry Morse, Madame Edouard Herriot and Madame Butterfly. Several stands of their fragrant Bedford Crimson were shown by Messrs. Laxton Bros. W. F. Dreer, Mrs. Henry Morse, Pax and Vanity were the chief varieties staged by Mr. J. H. Pemberton. Messrs. A. Warner and Son had vases of Hortulanus Budde, Los Angeles, Lady Inchiquin and Betty Uprichard.

In their exhibit of Roses, Messrs. B. R. Cant and Sons staged Etoile d'Hollande, Lord Charlemont, Betty Uprichard, and the large, single, yellow Cecil. Messrs. Walter Easlea and Sons gave the central place to a large vase of their new variety Everest, and also showed Angele Pernet, Mrs. Drew and Mrs. Henry Morse. Messrs. W. E. B. Archer and Daughter set up goodly vases of the pretty Dainty Bess, with Emily Grey and Joyous Cavalier. In their collection, Messrs. Harkness and Sons showed Nellie Parker, Lord Charlemont, Gwynneth Jones, Lamia and Mabel Morse. Mr. George Lilley staged good vases of Miss May Marriott, Madame Edouard Herriot and Golden Emblem.

Messrs. George Bunyard and Co. again showed a delightful collection of the old-fashioned Roses, and included the common Moss, Gloire de Mousseuses, Rosa Gallica and the Cabbage Rose. Messrs. D. Prior and Sons had vases of Frank Reader, Jack Hobbs and Golden Butterfly. Messrs. C. Engelmann, Ltd., set up a fine collection of greenhouse Carnations, amongst which there were vases of White Enchantress, Orange Sunstar, Maine Sunshine and Dorcas.

Fruit and Vegetable Committee.

Present : C. G. A. Nix, Esq. (in the chair), Mr. J. Cheal, Mr. P. C. M. Veitch, Mr. G. F. Tinley, Mr. A. Poupart, Mr. W. H. Divers, Mr. J. Harrison, Mr. E. Beckett, Mr. E. Neal and Mr A. N. Rawes (Secretary).

Messrs. G. Bunyard and Co. exhibited a collection of Cherry trees in pots, including the varieties Napolean Bigarreau, Act Gillos, a small, pale variety from Italy; Frogmore Bigarreau, Belle de Montreuil, Tradescant's Heart, Hâtive de Balis, a small, black Cherry; Early Amber, Elton Bigarreau, Précoce de Boppard, a fine, big, black variety; Kentish Bigarreau, Ochsenherzkirsche, another black sort from Germany; Gr. Prinzessin, very free and of large size; Black Tartarian (of Rivers), Florence, Di Nizza, very large and somewhat like Napoleon Bigarreau, and Schwarze Knorpel, another excellent black Cherry. Mr. J. J. Kettle showed Raspberries Lord Lambourne, a yellow variety, and Lloyd George.

Messrs. Laxton Brothers staged Black Currants Blacksmith, The Raven and Black Grape; Red Currants Laxton No. 1; Gooseberries Emerald and Bedford Yellow; and Raspberries Bountiful, Yellow Hammer and Renown.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

The eighty-second anniversary festival dinner of the Gardeners' Royal Benevolent Institution was held on Wednesday, June 29, in the New Princes' Galleries, Piccadilly. Major-General the Lord Treowen, C.B., C.M.G., occupied the chair, and he was supported by many distinguished horticulturists. As usual at these functions, the floral decorations were exceedingly beautiful, and a programme of vocal and instrumental music, rendered under the direction of Mr. Ralph Norris, contributed to the enjoyment of the evening.

After the usual loyal toasts had been duly given and received, the Chairman proposed the principal toast of the evening—that of the Gardeners' Royal Benovolent Institution—

and he associated with it the name of Mr. Leonard Sutton, Chairman of the Committee. The name of Sutton, said His Lordship, was known all over the world as contributing to an abundant harvest, and he hoped they would have an abundant harvest that evening. He said they had assembled to do their utmost to ensure the continued prosperity and extension of an admirable Institution. The love of gardens was general and all those who loved a garden had a tender spot for the men who were concerned in its making and upkeep. In recent years, owners of gardens found a difficulty in employing as many gardeners as before the war, but he hoped they would not reduce their staffs, for this would increase the difficulties of the Institution, as, doubtless, the older employees would be the first to go. Lord Treowen said that the first industry of the world begat others, including agriculture, viticulture and floriculture. Gardening was also responsible for the institution of the Royal Horticultural Society, the genial President of which he was pleased to see with them that evening. He heartily congratulated Lord Lambourne on the recent honour bestowed upon him by the King, and everyone would agree that the blue ribbon he wore so well was a worthy symbol of a blameless life. Flowers, said Lord Treowen, brighten our homes, cheer the weary hours of the sick and deck our last resting place. The love of flowers is a primitive instinct of Nature which unites us all. The great Francis Bacon said that a garden could not be well under thirty acres, but we live in an age when the humblest person may possess one. His Lordship then referred to the several funds of the Institution, such as the Victorian Era Fund, the Good Samaritan Fund, and the George Monro Memorial Fund, which, together with the payment of the pensions, involves an expenditure of £5,500 a year, although the assured income is only £1,200. It is, he said, to these festival dinners the Committee looks to make up the deficiency, and he asked all present to give as liberally as they could. He added to the toast the name of Mr. Leonard Sutton, and that of the Secretary, Mr. George Ingram.

Mr. Leonard Sutton said it was a great privilege to respond to the toast. He greatly appreciated how much the Committee was indebted to His Lordship for taking the chair that evening, for he had advanced the claims of the fund in an able manner; he was glad that he had mentioned the name of their Secretary, and wished that Mr. Ingram could reply to the toast instead of himself, for then they would have had an appeal, such as their late Treasurer, Sir Harry Veitch, used to make. The Institution, said Mr. Sutton, had two-hundred-and-fifty pensioners and is doing a vast amount of good. One way in which help could be forthcoming was by having collection boxes in gardens. He asked all connected with gardens, and especially the trade, to give the Institution their heartiest support.

The toast of "The Visitors" was proposed by Sir John Smith Young, C.V.O., Master of the Worshipful Company of Gardeners. He said he was glad to be present to continue the time-honoured association of the Worshipful Company of Gardeners with the Institution, and he extended a hearty vote of welcome to the visitors.

The toast of "The Chairman" was proposed by Lord Lambourne, who said that he had determined to spare no effort to be present to support His Lordship, for of all the distinguished men who had occupied the chair at these dinners none had more sympathy with the Institution than Lord Treowen.

At this stage of the proceedings the Secretary announced that £2,450 had been collected at and in consequence of the dinner, including £105 from the Chairman; £105 from Messrs. Rothschild and Sons, £105 from Messrs. Sutton and Sons, £100 each from Messrs. Hurst and Son, Messrs. W. Wood and Son and Messrs. Bentley and Co.; £90 from Mr. Charles H. Cook; £52 10s. 0d. each from the Royal Horticultural Society and Messrs. Waterer, Sons and Crisp; £50 from Messrs. Corry and Co.; £38 from Mr. R. W. Wallace; £30 from Mr. Charles H. Curtis, including £10 10s. 0d. from Mr. Laurence Bradbury; £25 from Major Churcher; £22 from Mr. W. Honess; £21 from Mr. H. G. Alexander; £17 17s. 0d. each from Mr. Bernard Crisp and Mr. T. Finch; £15 15s. 0d. from Mr. F. A. Secrett; £15 from Mr. T. H. Cook; £15 from Mr. F. Walton; £12 12s. 0d. from Mr. F. J. Chittenden; £10 10s. 0d. each from Col. Sir J. Smith Young, Mr. Peter Veitch, Miss Mildred Veitch, Mr. E. Beckett, Messrs. Bunyard and Co., Mr. W. Duncan Tucker, Mr. W. Cuthbertson, Mr. H. Dunnett, Messrs. Protheroe and Morris, Mr. E. Harriss, Mr. J. Cull, Mr. M. Larsen, Messrs. Barr and Sons, Mr. Arthur Dye, Mr. S. M. Segar, Mr. George Cobley, and Mr. J. L. Kinnell; £7 7s. 0d. from Mr. Raymond Rochford; £6 6s. 0d. each from Mr. W. Turner, Mr. R. Bates and Mr. H. W. Nutting; £5 5s. 0d. each from Messrs. Lowe and Shawyer, Messrs. Bees, Mr. A. Dimmock, Mr. G. Prickett, Mr. W. H. Cutbush, Mr. S. J. Martin, Mr. E. F. Hazelton, Mr. J. M. Bridgeford, Mr. J. F. McLeod, Mr. A. Howard, Mr. A. Dawkins, Mr. A. Bedford, Mr. F. Ridley, Mr. H. Hicks, Mr. E. T. Willis, Messrs. Charlesworth and Co. and Mr. J. Barker. Major E. G. Monro's Covent Garden list included £25 from Major Monro, £25 from Mr. George Monro; £10 10s. 0d. each from Messrs. G. Monro, Ltd., Mr. A. Watkins, Mrs. A. Watkins, Messrs. E. Stevens, Messrs. A. Stevens, Messrs. T. J. Poupart and Mr. J. P. Rochford; £5 5s. 0d. each from Messrs. T. Rochford and Sons, Mr. G. M. Rochford, Messrs. E. Rochford, Mr. Bert J. Monro and Mr. A. Baker. Mr. David Ingamells and Mr. John Collingridge's Covent Garden list amounted to £240, and included the following amounts: £10 10s. 0d. each from Mr. David Ingamells, Mr. J. Collingridge, Messrs. Parsons and Co., Mr. Harry Miles and Messrs. Slaymaker and Co.; £7 7s. 0d. from Messrs. Forster and Robins; £5 5s. 0d. each from Mr. G. Bambridge, Mr. O. Hiehle, Mr. W. O. Hiehle, Mr. J. Linford, Mr. Bruce L. Gibson, Mr. H. Chapman, Mr. W. Chapman, Mr. W. Maxwell and Mr. A. Maxwell.

SCOTTISH PANSY AND VIOLA.

FOLLOWING on the unfavourable weather experienced during the past three months, the exhibits of new Pansies and Violas were not so numerous as in former years at the first meeting of the above Association held in Glasgow on the 2nd inst. The awards were as follows: Pansies: Dan Cochrane, raised by Mr. ALEXANDER COCHRANE, Fauldhouse, First Class Certificate: Bill Smith, raised by Mr. T. W. WILSON, Neilston, Certificate of Merit. Violas: Jean Lister, raised by Messrs. ALEXANDER LISTER AND SONS, Rothesay, First Class Certificate; Mrs. George Gibb, raised by Mr. QUINTIN McFADYEAN, Carluke; David Stevenson, raised by Mr. D. STEVENSON, Barrhead; and Mrs. John Douglas, raised by Mr. JOHN DOUGLAS, Uphall, Certificates of Merit.

The outstanding novelty was Viola Jean Lister which was declared to be one of the finest Violas ever shown. The colour is white edged with heliotrope-blue, and is considered to be an improvement on Mrs. James Scalley. Its chief qualities are large size, good form, smoothness of petal and clear eye. Dan Cochrane, which was also awarded a First Class Certificate, on the previous Saturday, by the West Lothian Society, is the largest Pansy that has been shown in Glasgow; each flower measures four inches across. The lower part has dense black blotches with an edging of cream, while the upper part is violet edged with cream.

MORAY FIELD CLUB.

THE latest excursion of members of this Club was to the beautiful gardens and woods of Blackhills, Morayshire. Some fifty members took part, and the day was exceedingly fine. Mr. T. North Christie and his sisters conducted the members through the gardens and policies.

The gardens at Blackhills contain many rare species of Rhododendrons, and comparisons were made by some of the members with the celebrated Rhododendron Gardens near Birkenhead, but it was agreed that although much farther north, Blackhills can boast a collection as diversified, as gorgeous and as rare as that to be seen at Birkenhead or anywhere else in this country. Great admiration was expressed for the fine specimens of R. ochreoleucum, R. sinogrande, R. Royalei, R. argenteum, R. Falconeri, R. yunnanense, R. Loder's White, R. decorum and R. campylocarpum. The woods of Blackhills are famed for their fine Pines, Sitka Spruces, Copper Beeches and graceful Birches. At the time of the visit everything was looking its very best, the mossy green carpeting, the wild blue Hyacinths, and the pink Claytonia siberica making a picture that will not soon be forgotten. The members were entertained to tea by Mr. Christie and the Misses Christie. The President of the Club, Rev. George Birnie, thanked his hosts for the enjoyment and pleasure the members had derived from their visit to Blackhills.

GENERAL BULB GROWERS' OF HAARLEM (HOLLAND).

THE various Floral Committees have awarded the following Certificates to Tulips and Daffodils during their spring sessions, 1927.

FIRST CLASS CERTIFICATES.

Narcissus (*Incomparabilis*) *Fortune.*—Sulphur-yellow, big cup, orange-coloured changing to orange-red. From seeds, by Mr. WALTER T. WARE, Bath, England.

Narcissus (*Incomparabilis*) *Prince of Orange.*—White perianth, long, tall cup orange-red. From seeds by Messrs. de GRAAF BROS., and S. A. V. KONIJNENBURG AND CO., Noordwijk.

Narcissus (*Poetaz*) *Red Guard.*—Apricot-coloured perianth, with small orange cup.

Breeder Tulip St. James.—Dark Bordeaux-red with copper-coloured border.

AWARDS OF MERIT.

Narcissus (*Barrii*) *Carolina.*—Clear, pure white; frilled cup with dark orange border. From seeds, by Messrs. WARNAAR AND CO., LTD., Sassenheim.

Narcissus (*Barrii*) *Kilter.*—Creamy-white perianth with orange-red cup. Imported from England.

Narcissus (*Barrii*) *Mr. Dix.*—Creamy-white perianth, frilled cup, self-coloured orange.

Narcissus (*Barrii*) *Tilla Durieux.*—Pure white perianth, small cup with frilled, deep-red border.

Narcissus (*bicolor*) *Progression.*—Trumpet golden-yellow, widely-opened; perianth, soft sulphur-yellow. From seeds, by Messrs. L. VAN LEEUWEN AND SON, LTD., Sassenheim.

Narcissus (*Hermani*) *Martha Washington.*—Sulphur-white with orange cup. The Narcissi Hermani, are "giant" poetaz-Narcissi. As a rule, there are three flowers on a stem.

Narcissus (*Incomparabilis*) *Agra.*—Large, soft, sulphur-yellow perianth with deep, orange, widely-opened cup. Imported from England.

Narcissus (*Incomparabilis*) *Irma.*—Perianth sulphur-yellow, somewhat reflexed, with very clear and striking orange cup. Imported from England.

Narcissus (*Incomparabilis*) *Jacqueline.*—Clear, white perianth, with pure, deep orange cup, beautifully frilled.

Narcissus (*Incomparabilis*) *Leviathan.*—Sulphur-yellow perianth, very large; flat, spotted cup.

Narcissus (*Incomparabilis*) *Mrs. George Chandler.*—Perianth butter-yellow, non-closed, somewhat reflexed; cup large, widely opened, orange-yellow; strongly frilled, trumpet-shape.

Narcissus (*Incomparabilis*) *Orange Beauty.*—Very dark, golden-yellow perianth, orange cup, long, trumpet-shape, strongly frilled. Imported from England.

Narcissus (*Incomparabilis*) *Princess Astrid.* Clear butter-yellow perianth, tall, orange cup.

Narcissus (*Incomparabilis*) *Red Excelsior.*—Yellow perianth, folded; large, clear orange-coloured cup.

Narcissus (*Incomparabilis*) *Red Glory.*—Widely-spread perianth, with trumpet-shaped cup.

Narcissus (*Incomparabilis*) *Sophia.*—White, well-closed perianth, round petals, flat cup, orange-yellow, frilled.

Narcissus (*Leedsii*) *Miramare.*— Tall giant Leedsii, pure white perianth and creamy white cup. From seeds, by Messrs. E. H. Krelage and Son, Haarlem.

Narcissus (*Poetaz*) *Scarlet Gem.* — Lemon-yellow perianth, clear orange cup. Imported from England.

Narcissus (*Poeticus*) *Dulcimer.*—White, well-closed perianth with very flat cup, orange-bordered, interior changing to yellow. Im-Imported from England.

Narcissus (*Poeticus*) *Ringdove.*—White, round perianth, with small, yellow, orange-bordered cup. Imported from England.

Narcissus (*Poeticus*) *Sarchedon.*—Clear white, well-formed perianth, a rather flatter cup than that of Actaea. Shown by Messrs. Warnaar and Co., Ltd., Sassenheim, and Mr. H. van der Wilden, Sassenheim.

Narcissus (*Poeticus*) *Snow King.* — Large, white perianth, vivid cup with red border.

Narcissus (*white Trumpet*) *Ada Finch.* — Sulphur-yellow trumpet upon a paper-white, pointed perianth; large trumpet, strongly frilled.

Narcissus (*white Trumpet*) *Virginia.*—White perianth, creamy-yellow trumpet, frilled border, a little apricot colour.

Double Narcissus Sycorax.—Soft yellow, compact flower with clear orange.

Double Narcissus Valencia.—Large, double flower, like a Rose; clear yellow with orange. From seeds, by Messrs. de Graaff Bros., and S. A. Van Konijnenburg and Co., Ltd., Noordwijk.

Darwin Tulip, Golden Beauty.—Self-coloured golden-yellow with black stamens. From seeds, by the late Mr. N. Dames.

Darwin Tulip White Giant.—Vigorous, white flower, black stamens. From seeds, by Messrs. J. J. Grullemans and Sons, Ltd., Lisse.

Mendel Tulip Caesar.—Deep scarlet-red with yellow centre. A cross between Duc V. Tholl and William Pitt. By Messrs. E. H. Krelage and Son, Haarlem.

Mendel Tulip Brilliancy.—Fiery red with soft blue on a white base.

Single early Tulip Mathilda.—Soft satin-pink on white base; stout plant. Seedling of the late Polman Mooy.

Single late Tulip Aviso.—Vivid salmon-pink with soft coloured border. From seeds, by Messrs. E. H. Krelage and Son, Haarlem.

Single late Tulip Hera.—Satin-rose, soft pink margin. From seeds, by Messrs. E. H. Krelage and Son, Haarlem.

Single late Tulip Mayflower.—Soft satin-pink orange shaded and violet on the outside, blue centre. From seeds, by Messrs. C. G. van Tubergen, Jr., Haarlem.

Single late Tulip Pink Lady.—Pink with violet shade; long, sturdy flower on a stout stem.

Single late Tulip Scarletta.—Vermilion red on a creamy-white base.

Lily-flowered Tulip White Duchess.—A long, neatly shaped white flower, with white stamens. From seeds, by Messrs. E. H. Krelage and Sons, Haarlem.

Obituary.

William P. Lasham.—We have but recently learned of the death of this well-known Potato expert, for many years head of the Potato Department of Messrs. Sutton and Sons, and an employee of the firm for fifty years. His knowledge of the Potato and its cultivation was probably unsurpassed by anyone in this country, and he was a member of several committees of societies dealing with the Potato. He died at Reading on June 11, aged 65 years. Mr. Lasham was a man of kindly nature and greatly esteemed by all who knew him. The funeral was attended by Mr. Leonard Sutton, Mr. M. H. S. Sutton and numerous colleagues from the firm. He was a prominent freemason. The numerous floral tributes included wreaths from the heads of Messrs. Sutton and Sons, from several of the departments of the firm and from the local freemasons.

Karl Schöne. — The German horticultural papers record the death of Karl Schöne, the doyen of German Dahlia raisers. Schöne was not, like so many horticultural specialists, devoted to his occupation from his earliest years. Although always fond of gardening, and even as a child so clever at Rose growing as to make quite a nice sum of pocket money in this way, he chose the career of an artist, and taught drawing, using only his spare time in horticultural pursuit. It was the firms of Otto Mann that first recognised the value of his hybridising work, and it was through this firm that his first notable Dahlia—Goldkind—was put into commerce. While he remained an amateur many difficulties were placed in his way, but eventually the establishment of the Leipzig trial grounds of the German Dahlia Society, of which he was asked to become manager, cleared the way for him to abandon his profession and devote himself entirely to Dahlia raising. His finest achievement was the raising of the "Water-Lily" type, of which Aureola was the first example, and Goldrose and Farbenkönigin the best known varieties. He was also a pioneer in the dwarf type, and some of his most popular varieties were Goldene Sonne and Andreas Hofer, which were an immediate success as market cut flowers. He was sixty-nine years old at the time of his death, and had occupied a position, in spite of his long maintained "amateur" status, such as few professional raisers expect to attain.

ANSWERS TO CORRESPONDENTS.

Bark of Apple Tree Splitting.—*S. W. R.* There is nothing about the piece of bark sent for examination to give an indication of the cause of the bark splitting, and the whole tree having a scorched appearance. The description suggests that the tree may have been struck by lightning. There is a possibility, however, that there is something wrong with the roots. This could soon be ascertained by uncovering and examining a few of the roots.

Canterbury Bell.—*R. W. G.* The occurrence of a double cup in the Cup and Saucer Canterbury Bells is quite common.

Cucumber Fruits Failing.—*J. A. B.* and *A. E. L.* The Cucumber fruits sent for examination are not suffering from an infectious disease. Their failure to develop is caused by the weak constitution of the plants. Even young, healthy Cucumber plants produce more fruits than they can bring to maturity, and a certain proportion of them wither and die when quite small. If the plants are out of condition a large number of fruits may be affected. The disorder may usually be traced to the roots, and the first step towards recovery must depend upon an improved root action. Your best plan is to open the ventilators of the houses and dry out the beds for a week, maintaining the plants by judicious overhead damping. The fire heat must, of course, be kept going. This treatment hardens the plants and allows the roots to make fresh growth. At the end of the week you should close down the houses, top-dress the beds with an inch of clean, virgin soil, and then apply a dressing of dried blood at the rate of two ounces per square yard. A week later the beds may be mulched with stable manure and normal treatment may be carried out from that day.

Names of Plants.—*A. W. R.* Material insufficient for correct determination. *Iris.* 1, Iris sibirica; 2, rotted; the contents of the box were much too damp. *M. A. A.* Centranthus ruber. *Wadworth.* Buddleia globosa. *H. L.* Muscari comosum monstrosum. *C. C. M.* Rubus deliciosus. *E. B. A.* 1, Genista virgata; 2, a congested form of Delphinium grandiflorum; 3, Thymus odoratissimus; 4, Veronica buxifolia; 5, V. propinqua; 6, V. Hectori; 7, V. speciosa variety.

Peach Shoots Discoloured.—*T. T.*, *Norwich.* The discoloured areas on the young shoots of Peaches have been attributed to a botrytis disease. All twigs showing the dark lesions should be cut out when pruning the trees in winter, and spray the trees now with a rose-red solution of permanganate of potash.

Pears and Plums Dropping.—*A.* In explanation of your Plums and Pears dropping every year, the condition of the trees is at fault. Perhaps they are too vigorous, and with age they may become more fruitful. Or it may be that these particular varieties cannot be grown successfully in your garden. Such cases are not rare. The Pears look as if they had been touched by frost; so possibly they might have remained on the tree this year had the weather been more favourable.

Pears and Peaches Diseased.—*A. H. B.* The Pear-leaf Blister Mite is responsible for the diseased appearance of the Pear foliage. Spraying with lime-sulphur at winter strength before the buds are too far advanced, say in February, is said to be a remedy. The other specimen is Peach-leaf Curl, a common fungous disease. If blistered leaves are not very numerous, it would be well to cut off the affected shoots or leaves and burn them. In any case, spray the trees next season, just before the buds begin to swell in February, with strong Burgundy mixture made from the following ingredients: Copper sulphate, 2½ lbs.; carbonate of soda (crystals), 2¾ lbs.; water 12 gallons. Dissolve the copper sulphate in the bulk of the water, but keep two or three gallons in which to dissolve the soda. Mix the two solutions when about to use the spray.

Tomatos Diseased.—*H. W. M.* Your Tomato leaves are suffering from a disease known to Tomato growers as Mildew, which is caused by the fungus Cladosporium fulvum. No absolute cure for this disease is known, but it may be kept under reasonable control by thoroughly ventilating the houses and keeping up the temperature at night. Your object should be to maintain a dry atmosphere and thorough circulation of the air around each plant. Either dusting with sulphur powders or vaporising sulphur in the houses will help to retard the progress of the disease.

Tomatos Failing.—*A. M.* The Tomato plant sent is suffering from "Sleepy" disease caused by Verticillium albo-atrum. This fungus lives in the soil and, after entering the root, passes up the wood vessels, turning them a reddish-brown colour from the base to within a few inches of the growing point. This disease is caused by low temperatures, and usually does not occur at this time of the year. Its persistence seems to be due to the low night temperatures which prevail. Wilted plants recover at high temperatures, and you should keep your night temperatures as high as possible. If a large proportion of the plants is infected, a light shading on the glass will help them to recover. The wilted plants should be damped overhead, and very little water should be given to the roots. To prevent this disease occurring another year you should sterilise your soil by means of steam.

Violas Dying.—*A. S. A.* The stems of the dying Viola plants contain the resting spores of a fungus. Your only course is to dig up the affected plants and destroy them by burning. You would be advised to plant fresh stock in another part of the garden, as far from the old ground as possible.

Wood Lice among Orchid Roots.—*E. K.* Your best plan is to introduce a few toads into your Orchid houses and they will soon clear them of wood lice.

Communications Received.—J. P.—E. H. C.—P. O. P.—W. T. C.—A. E. L., Thanks for 1/- for R.G.O.F. Box.—F. V. N.—H. G. M.—J. N. M.—M. L. N.—A. G.—C. B.—A. H. B.—C. H.—L. le C. T.—C. T.

THE
Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63·1°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 13, 10 a.m. Bar. 31·5. Temp. 60°. Weather, Overcast.

Fertility in the Genus Brassica.

THE raiser of seeds has learned, by long experience and acute observation, to become skilful in his difficult and important craft, and as a result he is generally able to supply us with seed of a high standard of purity. The difficulties which beset the successful discharge of this task are illustrated strikingly in Mr. Alex. Nelson's article on Fertility in the Genus Brassica in the current number of the *Journal of Genetics*.[*] Mr. Nelson has made a most valuable survey of the state of fertility which exists in the large and economically important genus Brassica. This genus he regards as being composed of three sections, the Cole group, including the Cabbage and its allies; the Turnip, Swede, and Rape group, and the Mustards. His careful experimental work adds considerably to the valuable pioneer discoveries of the late Mr. Arthur Sutton. The genus Brassica shows a wide range of fertility. The Coles—forms of Brassica oleracea—which include Cabbages, Savoys, Brussels Sprouts, Broccoli, Kohl Rabi, etc., are self sterile. All the seeds which they set are due to pollen from other plants of like kind. There is, moreover, a considerable amount of inter-fertility between members of this group; Savoy pollen, for example, may provoke seed-formation in the Cabbage and vice versa. This is in accordance with the results of similar investigations made by Charles Darwin, and cited in his work on *The Effects of Cross- and Self-fertilisation in the Vegetable Kingdom*. Thus Darwin found that purple-green-leaved and white-green laciniated-leaved Cabbage planted together gave rise to a mongrel progeny of 325 seedlings from the purple-green variety of which 165 had white-green and 160 purple-green leaves. A similar mongrel offspring was provided by the white-green variety. It follows, therefore, that to keep varieties of Coles true to type great care has to be taken to grow each of them in effective isolation from any of the others of the group. Mr. Nelson shows, however, that the Coles may be divided into two sub-sections. It is the Cabbages, Savoys and their allies which constitute the self-sterile sub-section. Kohl Rabi and Sprouting Broccoli are self-fertile, although their self-fertility may be low; that is, though a given plant does set seeds when it is prevented from being pollenated by others of its kind, the number of seeds which it sets is small. The same need for isolation applies, however, for no good seedsman will tolerate avoidable rogues in the strains he puts on the market. Self-fertility obtains also in the Turnip, Swede, and Rape group, although the degree of self-fertility varies; Turnip and Rape exhibiting it less than does the Swede. Section three, the Mustards, are self-fertile. Self-sterility even in the Cabbage group is not, however, absolute. Mr. Nelson gives an interesting example of this fact in the case of the Cabbage Daniel's Defiance, grown not as a biennial but as a sort of annual. In this case seeds were sown in April, 1925, and flowering took place in May, 1926. On one part of the area which was wet, very few seeds set; six plants gave but sixteen seeds; on another part, which was dry, the self-set seeds were much more numerous; eight plants gave ninety-nine seeds. Environmental factors therefore count as well as factors of inheritance in determining self-fertility and self-sterility, and certain general practices followed by seed raisers thus receive their justification. Starving, keeping the plants "on the dry side," letting pot plants get somewhat pot-bound, and reducing the leaf area, are among the methods employed for inducing shy plants to set seeds. Finally, Mr. Nelson draws attention to the fact that fruitfulness and fertility are not synonymous terms; self-sterile plants, that is, plants which do not set seeds, may, nevertheless, develop normal-sized fruits—a fact which has often caused premature satisfaction in those of us who have hoped to obtain seeds from a promising hybrid, only to find at harvest time that the fruits, though large and plump, are empty. Cruciferous plants are often of this deceptive habit and, of course, the edible, seedless fruits afford examples of the fact that pollen has several distinct functions to fulfil, among which are fertilisation and stimulation of growth and fruit. It is of good augury for the industry of seed-production that our great firms are paying more and more attention to the study of the pure science of their industry. As the world goes on, the easier things get done, the difficult remain to do, and these difficult things are best done by combining the drive, industry and acumen of the plantsman with the scientific training of the research worker. As this paper shows, valuable results accrue from that happy combination.

Blackpool Flower Show.—The first great show at Blackpool will be held in Stanley Park on July 20, 21 and 22. Sir Walter de Frece, M.P will perform the opening ceremony at 10.45 a.m. on Wednesday next, in the Mayor's Pavilion; Woodland Road entrance to be used. During the evening of the opening day the President—Alderman R. Fenton, Mayor of Blackpool, and the Flower Show Committee will entertain the judges, pressmen, principal exhibitors, etc., to dinner at the Clifton Hotel. Everything points to a very successful show, and fine weather only is needed to ensure an attendance that will bring business to the trade exhibitors and much gate money to the Committee.

Weather in New Jersey, U.S.A.—Bad as our weather is (or has been), we in Britain are not having all the bad weather in the world; Mr. T. A. Weston, who is known to many readers of *The Gardeners' Chronicle*, wrote to Mr. Wm. Cuthbertson on June 19 as follows: "This is a 'wet' Sunday, so I cannot even look outside and am therefore writing. We cannot seem to settle down to summer weather, although we have had a few moderately warm days, but not above 80°. There have been lots of dull days and so much rain this season that I have not used the hose or sprinkler system. Everything is most rank in growth, but the rain has spoiled the Paeonies, while Delphiniums, etc., are so strong that I cannot tie them up fast enough. Roses are by no means at their full, ramblers or bush. Pansies and Violas are enjoying the coolness, but the former do not flower—just grow. The same relates to the English Violas, like Moseley Perfection. Jersey Gem is solid with flowers." The last-named plant is a charming miniature Viola of Mr. Weston's own raising which is succeeding well in this country, where it has been properly tried.

Swanmore Park Gardens.—On behalf of the National Memorial to Queen Alexandra, W. H. Myers, Esq., will open his beautiful gardens at Swanmore Park, Bishops Waltham, Hampshire, on Wednesday, July 20, and again on Thursday, August 18. We feel sure many of our readers, will take advantage of these opportunities to assist the Memorial Fund and to see the gardens where Mr. Ellwood has proved such an able successor to the late Mr. Edwin Molyneux.

Presentation to a Green Keeper.—In order to mark the twenty-first anniversary of the Essex County Bowling Club, Westcliff-on-Sea, the President, Mr. Cutler, made several presentations, including a medal to Mr. John Richardson, who has been keeper of the greens for the past fifteen years. Mr. Richardson is an old gardener; he was apprenticed at Knockderry Castle, Cove, Dumbartonshire, and was subsequently employed at Shendon Gardens and Castlemilk, Lanarkshire, and finally in the Glasgow Parks under the late Mr. Whitton. It was from Glasgow that he was appointed to Westcliff. The medal bore the inscription "Twenty-first Anniversary. Presented by Mr. Cutler, President, for fifteen years' faithful service."

China Tea.—An interesting article on the growing and preparation of Chinese Tea is contained in the *Journal of the Royal Society of Arts* for June 10. It would appear that the best Chinese teas are grown on terraced hillsides. The leaves are plucked and laid out in the sunshine on straw mats, being turned occasionally so as to ensure their drying evenly. When a rich green state is reached, tests are made to see that drying is not carried to a point where the leaves become brittle. The tea is then placed on wicker or Bamboo trays and rolled backwards and forwards with the palms of the hands for a period varying from thirty minutes to an hour. The third, or fermentation process, determines whether the product is to become black or green tea. The leaves are placed on a flat surface and covered with a damp cloth. The process is sometimes hastened by the use of covered wicker baskets under a slow fire. The treatment, which takes from two to six hours, according to the weather and the method adopted, is completed when the leaf takes on a copperish tinge; but if the tea is required to remain green, the fermentation is checked before any change in the colour of the leaf occurs. The most important stage is that of firing, for the flavour of the tea is determined during this process. The leaves are placed in a basket about thirty inches in diameter and three feet in height, open at both ends, and having a light Bamboo bottom placed about half way up. The basket is placed over a charcoal fire, all remaining moisture being thus driven off. The fifth and last process is sifting and grading. The best Chinese teas are not artificially scented, the real connoisseur taking delight in the natural aroma. Scented tea comes mainly from Foochow, and is prepared by heating certain kinds of flower petals with the tea leaves. In some instances the petals are left in the tea, while in other varieties a layer of fresh Jasmine blossoms is sprinkled over a layer of tea, the layers alternating until the basket is filled. The receptacle is then placed aside until the perfume has thoroughly permeated the tea, which is afterwards separated from the flower petals. This mingling of the tea leaves and flowers is repeated until the desired aroma has been obtained. The flowers commonly used for the purpose are the white Jasmine (chu lan) and the "yu lan," a species of Magnolia. The Jasmine is very expensive, and costs the tea makers from £4 to £8 per picul (133⅓ lbs.).

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[*] *Journal of Genetics*, Vol. 18, No. 2, June, 1927.

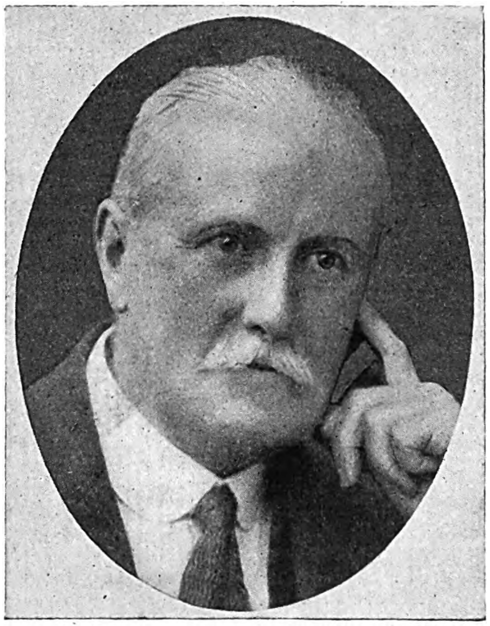
Cupressus Lambertiana var. gracilis.—We are informed that M. Henri Detriché, Route des Ponts de Cé, Angers, has registered Cupressus Lambertiana var. gracilis with the International Bureau of Registration of Novelties. The variety is said to have very fine foliage, and will be distributed by M. Detriché, who is stated to be the raiser. Cupressus Lambertiana, Gordon, is regarded as synonymous with C. macrocarpa—the Monterey Cypress—of which there are well-known golden and fastigiate varieties.

British Industries Fair.—Despite the huge increase in the space provided in both London and Birmingham for the British Industries Fair of 1928, there are ample indications that all of it will be booked up much earlier than ever before. A significant feature of the applications is that twenty-five per cent., so far, are from firms which did not exhibit last year, some being new-comers and others firms which have exhibited before, but not for four or five years.

New Roses at Vincent Square.—The National Rose Society's exhibition of new Roses is to be held in the Royal Horticultural Hall, Vincent Square, S.W.1, to-day—Friday, July 15. This exhibition promises to provide the most extensive and varied display of new Roses ever brought together. Popular features of the exhibition will be the competition for the Gold Cup given by the *Daily Mail* for the best new scented Rose of the year; and the new Roses that will be staged for the award of the Society's Gold Medal. The entries, which are confined to British raisers, are so numerous that they promise to create a record.

Rhododendron Association.—A meeting of those interested in the new Rhododendron Association was held at Vincent Square on Tuesday, July 5, at five o'clock, at which the rules of the Association were formally adopted and it was decided that all present at this meeting, together with those who attended the first meeting on the 3rd May, should be Founder members. The following were elected to form the first Council of the Association.—Mr. Lionel de Rothschild, President; Vice-Admiral Heneage-Vivian, Vice-President; Mr. J. B. Stevenson, Treasurer; with Mr. J. J. Crosfield, The Marquess of Headfort, Mr. G. W. E. Loder, The Hon. H. D. McLaren, Mr. Peter Veitch, Mr. F. Gomer Waterer, Mr. E. H. Wilding and Mr. P. D. Williams, Members of the Council. It was decided that any subscriptions received during 1927 should carry full membership until December 31, 1928. As a secretary has not yet been appointed, all communications concerning the new Association should be addressed to Mr. Lionel de Rothschild, New Court, St. Swithin's Lane, E.C.4. It is hoped to have a book of rules printed and membership forms prepared shortly.

Mr. Charles H. Wright.—Many old Kewites who have received instruction and much kindness from Mr. Charles H. Wright will, we feel sure, be pleased to see his portrait on this page. Mr. Wright was born at Oxford and is the only son of Mr. Charles Gilbert Wright, who was well-known to many generations of University men. He himself received his education at New College School, Oxford, and his early training in the herbarium and laboratory at Oxford Botanic Gardens, under Professor M. A. Lawson, at the time when Mr. W. H. Baxter was Curator of these gardens. Here he acted as Demonstrator in botany in 1883-4, but in the latter year was appointed Assistant in the Herbarium at the Royal Gardens, Kew, where he has remained ever since. In 1908 Mr. Wright succeeded Dr. O. Stapf as Assistant Keeper of the Herbarium, therefore he has served under no fewer than four Directors of the Royal Gardens and five Keepers of the Herbarium. He succeeded Dr. J. G. Baker as lecturer in Systematic Botany to the student gardeners, and in 1899 he took charge of the Petaloid Monocotyledons and Ferns in the Herbarium. Ever since 1896, Mr. Wright has been sub-editor of the *Flora of Tropical Africa* and *Flora Capensis*, and meantime has worked out various families in these floras, and also in the *Index Florae Sinensis*. He has contributed many papers to scientific publications, including a Monograph of Roxburghiaceae to the *Journal* of the Linnean Society in 1896, and in the same year he was made an Associate of the Linnean Society. Among other duties he has undertaken is that of Assistant Examiner in Botany to the Science and Art Department, South Kensington in 1899, 1900 and 1901. His long association with Kew and the science of botany has brought him into direct contact with many of the leading horticulturists, past and present, notably Dr. Maxwell T. Masters, Mr. H. J. Elwes, Mr. W. Gumbleton, Sir Charles Strickland, Mr. A. Kent and Mr. James O'Brien, all of whom have been frequent visitors to Kew. Kew has a wonderfully fine collection of drawings, and the re-arrangement of this collection by Mr. Wright has been one of his most pleasurable duties. Although several other people have served at Kew as long as Mr. Charles H. Wright, it is probable that he holds a record there as an established civil servant. Notwithstanding his many duties, Mr. Wright has found time to take an interest in social and political affairs in the district, and we remember that for quite a long period he was captain of the local Church Lad's Brigade.



MR. CHARLES H. WRIGHT., A.L.S.

The Potato Crop.—The Monthly Agricultural Report of the Ministry of Agriculture states that early Potatos are giving only light yields and the tubers are small. Main crops, though still rather backward, are healthy and vigorous as a rule, and have come on quickly since the rains. On the whole, the present appearance of the plants suggests crops practically up to average in most of the chief Potato districts, although in many parts of Yorkshire the crops were damaged by frosts in June and only light crops are anticipated.

The Fruit Crops in Northern Ireland.—According to the Monthly Report issued by the Ministry of Agriculture for Northern Ireland, it is generally anticipated that, apart from isolated orchards, the yield of practically all classes of fruit will be below the average this season. Apple trees were affected by frost in April when the buds were beginning to shoot, and considerable damage was also done by the frosts which occurred in May and early June. In most parts of the counties of Antrim and Armagh there will be poor crops of Bramley's Seedling, this variety having suffered severely. In the counties of Down and Tyrone, Grenadier and Worcester Pearmain apparently escaped the frost fairly well, and promise to give a fair crop, and even in County Antrim, where Apples are a failure generally, Grenadier is regarded as having a favourable crop. Allington Pippin is expected, to give only a poor yield. The Pear crop, while not a complete failure, is expected to prove light, while it is also anticipated that, except in very sheltered positions, Plums and Damsons will show a poor yield. The crop of Gooseberries is fairly good, but in some districts the frosts of April and May damaged this crop at the critical period. White, Red and Black Currants were also involved in the disastrous frosts of April, and the crops will be below average. The prospects for Raspberries are very good, and Strawberries are also expected to give a fair yield. Insect and fungous pests have not been so virulent this season as in previous years. As regards insect pests this immunity is attributed to the fact that many trees were sprayed during the winter with tar distillate. Where trees have not been sprayed aphis and Apple sucker have been prevalent. Canker and Apple scab continue to do considerable damage to the Apple crop, although these diseases are less serious than in previous years.

Failure of Outdoor Carnations in the North.—Considerable interest has been evinced in northern gardening circles this season, writes a Scottish correspondent, on the unusual mortality amongst Carnation plants. The plants weathered the cold snap, grew, in fact, but when the atmospheric conditions improved as regards temperature, they "wilted"—first cast their green sheen, became yellowish in appearance and hung limp to the stakes. The trouble has been attributed by some of the best growers to excessive damp. During spells of wet weather, owing to the peculiar formation of their leaves, Carnations will unduly retain moisture, which in time causes serious injury to the stem, and that immediately below the soil, causing the final collapse of the plants without the presence of any other disease. Mr. W. Grant, gardener at Crathes Castle, near Aberdeen, advises growers in the north to grow the older-fashioned and hardier types of the Dundas Scarlet section, Corona, Raby Castle, Mrs. Nicholson, Duchess of Rothesay, etc., and only to increase the stock of those which are found to do well. He states that many of these old varieties give annual sheaves of flowers and cause little anxiety about fungous diseases. Mr. Grant's last word of advice is a reminder that a light, sandy soil that will become parched in dry weather does not suit the average Carnation, as roots that have been made near to the surface in normal weather perish, and the plants contract red spider owing to the dryness, but a fairly stiff, well-drained soil that will keep fairly evenly moist is much better suited to the Carnation.

Sugar Beet Industry in Scotland.—Rapid extension of Sugar-Beet growing in Scotland is being made, for farmers are beginning to realise more and more that there is "money in the industry." The chief limiting factor in a more rapid extension of the acreage under Sugar-Beet is the paucity of factories. Too great a distance from factories make would-be growers rather timid of entering whole-heartedly into the business, but in time this disability should be remedied. Nevertheless, from a small beginning a few years ago, the returns from the industry now annually amount to a very considerable sum. The Government subsidy has much to do with the abnormal advance made, but on all hands it is admitted the investment is a sound one. It is computed that over a fairly large area the profits amount to something like £6 2s. 6d. per acre. The subsidy diminishes in amount—it began in 1924-25—after four years have elapsed, but notwithstanding this it is felt by those chiefly concerned that home-grown Sugar can, as a fully established industry, look forward without anxiety to the ultimate expiration of the subsidy.

Photographic Survey of Deeside.—A novel movement has been inaugurated by the members of the Deeside Field Club, and one which might well be emulated by other field clubs. The project is to compile a photographic survey of Royal Deeside—a collection of views that will adequately illustrate the topographical and other features of the beautiful countryside drained by the Dee, near the head of which stands His Majesty's Highland home, Balmoral Castle. As may be supposed, the members are securing the help of those willing to assist, and who are possessed of the necessary qualifications. The following are the kinds of pictures desired, and the hints may prove useful to other field clubs who may be inclined to do likewise:—Scenery: Mountains, mountain valleys, corries, table-lands; lowland scenes, moorlands, woodlands; lakes, tarns; stretches of the Dee and its tributaries; rock gorges, waterfalls, rapids, noted salmon pools, views from prominent points, views of all types of scenery, not only pretty points, are invited. Towns and villages: General views, streets, buildings and other places and objects of interest. Houses: Castles, mansion houses, farms, crofts and cottages. Occupations of the people: Harvesting, past and present: cutting and drying of peats, timber cutting, etc. Sport and games: Deer stalking, salmon fishing, athletics, school games. Antiquities: Stone circles, isolated stones, cairns, hut circles, sculptured stones, hill forts, camps, scenes of historic interest, traces of former human occupation in historic times. Fauna and Flora: Illustrative of animals and plants in their natural setting. Gifts of old prints on any of the foregoing subjects are also invited. Of course, the Club does not wish to acquire copyrights, but it will be assumed that the gift of a print includes permission to reproduce it in any of the Club's own publications, or as a lantern slide, and the right to exhibit such at any meeting of the Club.

Appointments for the Ensuing Week.—Monday, July 18: Harrogate and District Horticultural Associations' meeting. Tuesday, July 19: Royal Horticultural Society's Committees meet; National Carnation and Picotee Society's show; London and South of England Viola and Pansy Society's show; Yorkshire Agricultural Society's show at Darlington (three days). Wednesday, July 20: Blackpool Flower show (three days); Liskeard and District Horticultural Society's show; Ringles Cross and Uckfield District Sweet Pea Society's show; Compton and District Horticultural Society's show; Tibshelf Horticultural Society's show. Thursday, July 21: St. Stephens Horticultural Society's show; Orpington Horticultural Society's show. Friday, July 22: Bristol Floral Fête (two days); Birmingham Floral Fête (two days). Saturday, July 23: National Carnation and Picotee Society's show in conjunction with Forest Row Horticultural Society's show, at Kidbrook Park, Sussex; Sundridge and Brasted Horticultural Society's show; Falkirk Rose show; Springfield (Fife) Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Horticultural Society's Show at Chiswick.*—The magnificent weather of Saturday last enabled the Horticultural Society to bring to a brilliant close a season of exhibitions which, during their long career, have never been equalled. The number of visitors was 8,820, and it was long before they exchanged the coolness and massive shades of Chiswick House for the more open and sunny lawn in the Society's garden. The show was, we think, the best which July has ever produced, and not by any means deficient in novelties of importance. Messrs. Veitch sent flowers of the New Zealand Dracaena indivisa, a plant now seventeen feet high with the habit of a Yucca, and apparently hardy; and along with it a couple of pretty annuals—the one a yellow Leptosiphon, the other a Collinsia bartsiaefolia resembling C. bicolor. Messrs. Standish and Noble produced the beautiful Jezoe Spruce, with rich, light green foliage, and two very distinct forms of Fortune's Cephalotaxus. A little Medinilla (Sieboldii) from Mr. Colyer's garden, attracted much attention, as also did some collections of variegated plants from Messrs. Lee and Rollissons. Fruit growers are evidently behind plant growers, as becomes more and more evident each year. For although some of the Exhibitors always stand on the highest point to which gardening can reach, yet it must be owned that numbers still continue to cluster helplessly about the lower rounds of the horticultural ladder. As for ripening, that would not seem to enter into consideration at all, at least, among Grapes, which, in many cases, look as if they were shown for the express purpose of setting the teeth on edge. In classifying the whites we could find no better names to express their appearance than Verdigris-green, Grass-green, and Asparagus-green. What a contrast was presented between the verjuice bunches of Constantine, Martin, Campbell, Davis, and Summerby, well-grown as they were, and the admirable Chasselas from Lord Southampton's garden. Let us add, while our critical humour lasts, that among flowers it would be a great improvement if nurserymen would take the trouble to name their plants with some regard for accuracy; or, at least, if they would not produce the most trifling varieties, if varieties at all, of well-known plants, with new names that can be intended for no other purpose than to sell them by. *Gard. Chron., July*, 17, 1852.

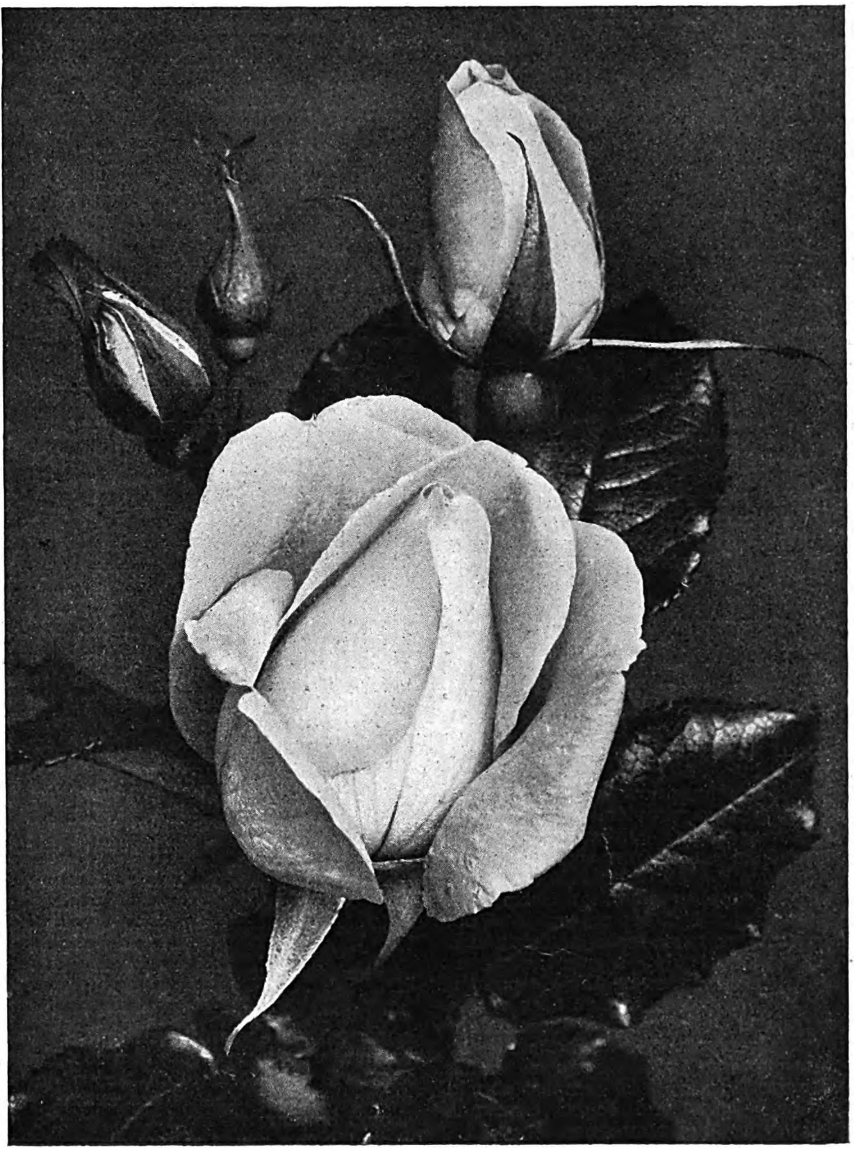


FIG. 18.—ROSE LADY FORTEVIOT.

N.R.S. Gold Medal, July 1. Flowers orange-gold. Shown by Messrs. B. R. Cant and Sons. (see p. 36).

Publications Received.—*A Bird Book for the Pocket*, by Edmund Sandars; Oxford University Press, Amen House, Warwick Square, E.C.4.; price 7/6 net.—*Poisonous Plants: Deadly, Dangerous and Suspect*, with brief descriptions by W. Dallimore; edited by Dr. A. W. Hill; Frederick Etchells and Hugh Macdonald, 1a, Kensington Place, London; price £2 12s. 6d.

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon,
Bletchley Park, Bletchley, Bucks.

Cattleyas.—Such autumn-flowering Cattleyas as C. labiata, C. Gaskelliana, C. Bowringiana, C. Dowiana and its variety C. Dowiana aurea, also the numerous hybrids derived from these species are commencing to make new growth and should be placed in the lightest and warmest position in the Cattleya house; of all the elements necessary to the proper development of Orchids none is of more importance than light. The supply of water at the roots should be gradually increased as the new growths attain strength, taking care that the compost becomes dry between each application. C. gigas and its many varieties are growing freely and should be afforded a light position near the roof-glass at the warmer end of the warm Cattleya house. When the flower sheaths are observed water should be afforded the plants whenever they become dry. C. Schröderae, C. Lawrenceana and others, which have passed out of bloom, should be allowed a slight rest by being kept on the dry side for some little time. Any plants that require fresh rooting-material may be attended to when new roots are observed to be developing. Plants of C. Mendelii, C. Mossiae and their hybrids that have failed to produce flower sheaths may also receive this attention should they need it.

Coelogyne.—C. asperata, C. Dayana and C. Massangeana produce their flowers at this season of the year. Although their colours are not particularly bright, the flowers of these Coelogynes are attractive, and produce a fine effect when the plants are well-flowered, as the graceful racemes present an appearance quite distinct from the other members of the genus. The species named have much the same habit of growth, although the flowers are quite distinct, and with the exception of C. Massangeana, which does best in a warm, intermediate temperature, need plenty of heat and moisture when in full growth. Plants of the strong and free-growing species require to be grown in good-sized receptacles provided with ample drainage, and they are best cultivated in shallow pans or baskets suspended from the roof, under moderate shade. Well established plants require copious supplies of water during the growing season, and for this reason it is not advisable to place too much material about their roots. These plants enjoy a sweet root-run, and too much stress cannot be placed upon the fact that no Orchid can succeed in decomposed rooting materials; they should therefore be examined each year after flowering, and any compost showing signs of deterioration should be substituted with fresh. The compost should consist of rough peat and coarse Osmunda fibre, mixed with Sphagnum-moss.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Carrots.—Make a good sowing of Carrots on ground which has been cropped with early Potatos. Fork the soil, and dress it with a little superphosphate, wood-ash, and a liberal sprinkling of soot. These materials should be well raked in the soil and the latter made fairly firm before sowing the seeds. The Shorthorn or stump-rooted varieties are best to sow at this season Sow the seeds thinly in drills made one foot apart; do not thin the crop severely, as very small Carrots will be much appreciated in the autumn, and can be drawn for use as required. A still later sowing will provide roots for use until next spring. Use the Dutch hoe as often as possible, and dust the rows with old soot.

Tomatos.—Up to the time of writing the weather has not been favourable to Tomatos in houses; June was practically sunless and cold. Complaints are general of the fruits setting badly and the plants making sappy, strong growths, especially where they are planted out in borders. It is under these conditions that Cladosporium is most prevalent, though this disease is more often due to insufficient ventilation, causing a close, stuffy atmosphere. White fly is often troublesome, but this can easily be destroyed by Cyanogas. Plants that are cropping freely should be fed at alternate waterings with liquid manure. This stimulant may be varied with other good artificial manures. It is often noticed that many of the fruits have yellowish patches. This is sometimes caused by a check to growth, but more often by a lack of potash in the soil; care should therefore be taken to make sure that the plants are provided with potash in some form. Keep all side-growths pinched out at an early stage, and see that the plants are kept tied securely to their supports. Tomatos that were planted out-of-doors have, on the whole, made but little growth owing to the abonormally cold weather.

Marrows.—These, like Tomatos, have made very poor progress, but with warmer weather, growth will soon be evident and care should be taken to keep the shoots well pegged down or strong winds will break them. Marrows planted earlier in frames should now be fruiting freely. Keep the growths trained thinly and feed the roots with weak liquid manure.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Primula malacoides.—Seeds of an improved strain of this popular plant may be sown now in a cool house; the seedlings will appear very quickly. This plant will never thrive in a dry, warm atmosphere, but is a success in a cold frame. The seeds should be sown in pots filled with a light, open compost, and covered very lightly with soil. Place a piece of glass over the pot, and shade the soil from bright sunshine. Under these conditions the seedlings will soon appear above the surface, when they should be gradually exposed to more light; at the same time, they will need shading from bright sunshine.

Hydrangeas.—So soon as strong shoots can be obtained, cuttings of this useful plant should be inserted without delay. Where space is limited, three cuttings may be rooted in a small, sixty-sized pot, but they must not be allowed to become pot-bound, but repotted so soon as they are rooted. Most growers favour rooting Hydrangea cuttings singly in small thumb pots, placing the cutting near the side of the receptacle, but equally good results may be obtained by the former method. The cuttings should be stood in a case in a cool house, where they will soon form roots, and so soon as it is evident that the roots are active, the plants should be removed from the case and placed in a cool house near the roof-glass. After a few days' exposure to the light they may be potted on into other receptacles. Pot moderately firmly, but do not ram the soil too hard. The young plants will need careful watering until the roots are established in the new compost; occasional spraying of the foliage will prove beneficial until they are well established. Although careful watering is recommended during their early stages of growth, Hydrangeas when growing freely need abundant supplies of water, especially during hot, dry weather. In the winter, when the plants are dormant, a frost-proof house is all that is needed. Where large specimens are required, they should only be pruned lightly into shape, for severe pruning is a frequent cause of the plants not blooming. All weakly growths should be removed and the plants placed in larger receptacles as becomes necessary. The colour of Hydrangea flowers, whether pink or blue, is probably influenced by the soil and water used. Most cultivators desire the blue shades, and this may readily be obtained by the use of a proprietary preparation sold for the purpose.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P.
Ford Manor, Lingfield, Surrey.

Orchard House.—Very early fruits of Peaches and Nectarines are often not good flavoured owing to hard forcing, but they are appreciated in May, even if of inferior quality. Ripe wood is essential to success, and to ensure this the trees need a long season of growth, therefore, the sooner these early varieties are transferred to clean, dry pots the better. I recommended in a former calendar the necessity of having a good stack of loam, mixed with the other necessary materials, ready for use as wanted. The compost may be chopped down as required and exposed to the sun and air until it is dry and warm. Plenty of crocks, together with a few small bones or pounded oyster shells should be placed in the bottom of the pots for drainage. Pot fruit trees of all kinds require to be potted very firmly, therefore the compost should be well rammed until it is as solid as the old ball. As potting is finished, return the trees to their former position in a cool house and keep them rather close for a few days. If the balls of earth and roots were soaked thoroughly before repotting was done but little watering will be necessary until new roots become active.

Strawberries in Pots.—There have been many complaints of failure with this most useful fruit. Success in growing pot Strawberries lies in selecting suitable runners from the open ground plantations; they should be taken from young, vigorous plants early in the season. The pots in which Strawberries are grown do not require a large amount of crocks, but the latter should be clean and well placed. Worms are sometimes troublesome, hence the advantage of sprinkling soot over the crocks and also in the compost. The Strawberry is as easily grown to a high degree of excellence as any plant. The layers should be potted so soon as they are ready, using good fibrous loam, a little bone-meal, old mortar rubble and a little decayed stable manure. The soil should be made very firm with a wooden rammer. The plants make a great mass of roots before the end of the season, and when well-rooted need copious supplies of water. When the plants are making good progress and have healthy growth, very little, if any, feeding with liquid manure is necessary; many successful Strawberry growers condemn high feeding at any season, but more especially in the autumn.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford,
Wrotham Park Barnet, Middlesex.

Summer Pruning.—Summer pruning of fruit trees, when done correctly, not only favours the development of sturdy, well-ripened fruit-bearing wood, but the removal of surplus growths allows sunlight and air to enter the trees and the fruits become larger, finer and better-flavoured. When carrying out the operation it must be remembered that certain varieties are naturally of robust growth and need very careful management. Neatly-trained trees that develop a moderate amount of wood annually usually bear the best fruits.

Wall Trees.—The summer pruning and thinning of the young shoots on wall Plum trees should not be done too early or too severely at first, as this might be followed by fresh growth closer to the main branches than is desirable. Shorten all shoots that are not required for extension to four or five leaves. Train in young shoots for furnishing the space and to take the place of any of the old branches that may be removed. Stop or rub off gross shoots and all foreright ones, with the object of having the trees furnished with shoots of medium strength, as these fruit best. Trees growing too strongly to be fruitful should be marked for root-pruning when the proper time to do this arrives.

Bush Trees.—Examine young trees and remove some of the shoots where there is a danger of the head being crowded, also any which may cross or otherwise press against others. This will ensure plenty of air and light reaching the main fruit-bearing wood when in leaf. A little timely pruning at intervals in summer is very important to obtain evenly-shaped, fruitful trees, and the removal of these young shoots does no harm when the trees are in full leaf, for the sap will be diverted to other channels where it will be of far greater service.

Grafted Trees.—Examine trees that were grafted in spring. If the scions have united and are growing freely, see they are made secure against strong winds. A good plan is to tie thin Bamboo canes to the old wood and fasten the grafts thereto with raffia. Remove all young growths on the stems and branches below the grafts so that all the sap may be diverted to the scions. Young, healthy grafted trees that have not been headed back too severely will come into bearing quickly.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Transplanting Seedlings.—Wallflowers and other plants used for spring bedding, which were raised from seeds sown some time ago, should be transplanted before they become crowded, in ground previously prepared for them. If the land was dug some time previously and is moderately firm, the resulting growth of the plants will be more sturdy and stocky than if they are put in loose, recently dug ground. This is very important, as large, soft plants usually lift and winter badly. Many cultivators consider it unwise to transplant Wallflowers and other subjects used for autumn planting during spells of dry weather, and this often results in the seedlings being left in the beds until they become crowded and spoiled. Delay is quite unnecessary, for if the roots are dipped in a puddle of clay and well-watered afterwards, they may be safely moved at any time. The method of watering is also important. A depression should be left around each plant which should be watered separately with a watering can. When the water has soaked away, the dry soil should be drawn around the plant to form a loose mulch. By this method one watering is usually sufficient, and the surface of the bed is not rendered hard and caked by repeated surface watering.

Staking and Tying.—Plants in herbaceous borders will require constant attention in staking and making the shoots secure against high winds and rain. Many summer-bedding plants will also require attention in this respect, and some of them will require regulating and pegging down to the soil. Stakes placed to plants should be as inconspicuous as possible and the growths should not be bunched with the tying material, but secured in such a manner that the natural habit of growth is preserved.

Salvia nemorosa.—This beautiful Salvia is an ideal plant for grouping in the mixed border, also for growing in large lawn beds, or for planting in generous, informal masses in the semi-wild parts of the garden. Where large stocks exist, this Salvia may be propagated by division, but on account of its long, woody roots, this is not always easy. It may, however, be propagated from cuttings made of the young shoots when they are about four inches long; the best way, however, to raise a large stock quickly is to have stock plants and keep them cut down. The young growths made during June or July should be secured as cuttings, which may either be dibbled into a bed of soil in a cold frame or inserted singly in small pots, and if they are stood in a cold frame and kept close roots will form readily, and the plants will be ready for putting out during the autumn or following spring. Considering the beauty and long-flowering period it is surprising that this beautiful Salvia is not more generally used for garden decoration; it is usually sold as S. virgata or S. virgata var. nemorosa; the true S. virgata is, however, a distinct and much inferior species.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Greenhouse Climbers.—Many beautiful subjects may be usefully employed for furnishing walls and rafters in the greenhouse. Rhodochiton volubile displays its full beauty when grown overhead, its long, trailing shoots being covered with dark, chocolate-coloured, trumpet shaped flowers, each set in a purplish-coloured bract. The effect of a large plant is like a curtain, and very striking. This Mexican plant may be readily raised from seeds sown in spring and the seedlings grown on to flower in their second and successive years. Tibouchina semi-decandra is another splendid greenhouse climber, its large purple flowers being freely produced at the ends of the current year's shoots. A stock may be readily raised from cuttings of half-ripened growths inserted at almost any time when they are available. The white-flowered Mandevilla suaveolens is also worth growing in this way; its pure and fragrant flowers are borne in great profusion. This Mandevilla is best planted out, and not grown in pots. It may be raised either from cuttings made from side-shoots or from seeds. Bomarias are admirably adapted for furnishing rafters on which their large clusters of drooping, highly coloured flowers show to advantage. Many interesting hybrids have been raised, and two of these have distinct associations with northern gardeners as they are known as B. Whittonii and B. Matthewsii. Bomarias are also easily raised from seeds, and the hardier form, B. Lehmannii, may be grown in our western districts outside on a sunny wall. Fuchsias are not frequently employed as climbers, but some drooping varieties are most effective when trained up and along the roof-rafters, and in this position their pendant flowers are displayed to advantage.

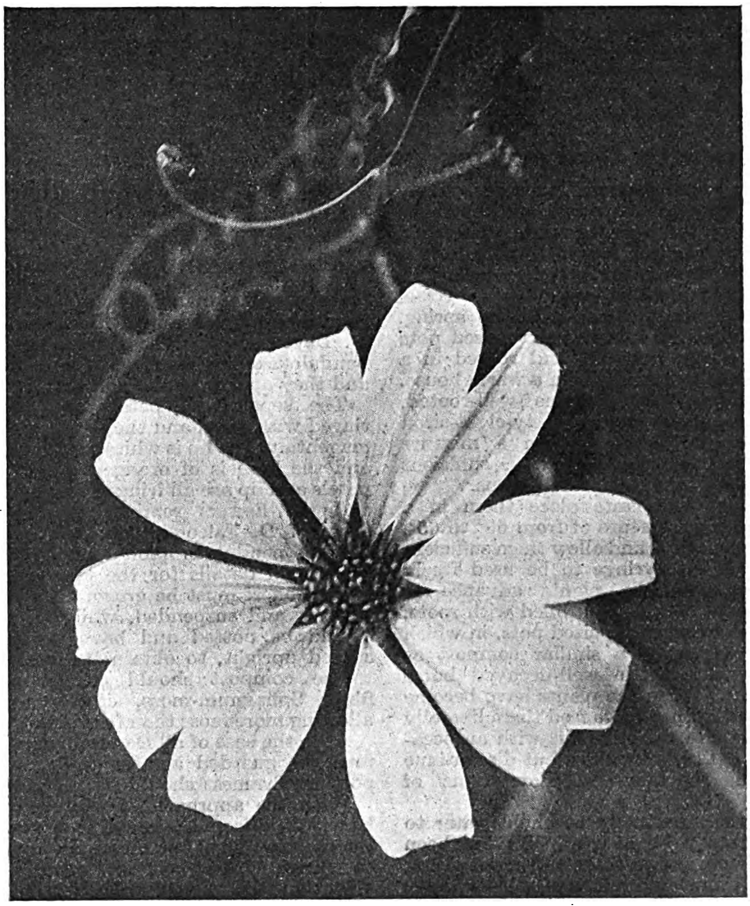


FIG. 19.—MUTISIA RETUSA GLABERINA.

R.H.S. Award of Merit, July 5; Flowers blush. Shown by Sir William Lawrence, Bart. (see p. 38).

Cyclamen.—Seeds of the florist's Cyclamen may be sown now in pans and germinated in an intermediate house. The pans should be filled with a compost of loam, leaf-mould and sand, and the seeds dibbled in about one inch apart, and half-an-inch deep. Cover the seed-pan with shaded glass, and keep the soil moist by dipping the pans to their rims as necessary. When the seedlings appear, accustom them gradually to cooler and airier conditions, and expose them to all the light available by placing them on a shelf near the roof-glass, where they may remain until ready for pricking off separately into small pots. Older plants which have been resting since their flowering period may be well watered prior to reducing the old ball of soil, and then repotted, using good loam, leaf-mould, some old mortar rubble and sand. Water the newly-potted plants carefully, and stand them either in a frame or cool house, syringing them occasionally to keep the young foliage clean and healthy. The foliage of some of the plants is so beautiful as to make them valuable for decorative purposes, even when not in bloom

Cabbages.—The main sowing of Cabbages should be made now, choosing early varieties which can be depended on to heart early in spring. Most seedsmen have their own specialities, and a selection is advisable, as only by trying the different sorts is it possible to find out which are best suited to the various districts. The small sorts represented by Harbinger and April may be grown about fifteen inches apart each way, but the larger maturing sorts, such as Flower of Spring, require more room. Sow the seeds thinly in drills made a foot apart, and endeavour to have strong, short-jointed plants Should the soil be very dry at sowing time, water should be applied to the drills before sowing the seeds. Birds are fond of the tiny seedlings and where they are troublesome the bed should be netted.

INDOOR PLANTS.

ECHINOCACTUS MYRIOSTIGMA.

Echinocactus myriostigma is one of the most distinct and interesting members of the Cactaceae. When not in bloom it has more the appearance of the work of a sculptor than a product of nature. The silky, pale yellow, Daisy-like flowers are produced during the summer; each individual flower lasts only for about two days, but several are produced by each plant during the season.

The stems have usually five very prominent ribs, but some have only four, while others may have so many as seven. The bark is dotted with small, white, scale-like bodies which are composed of delicate interwoven hairs. The plant is a slow-grower and succeeds under warm greenhouse treatment in a sunny position. It should be planted in well-drained pots or pans containing very open, porous compost, and plenty of broken sandstone. From October to March practically no water is required at the roots, and the atmosphere should be kept dry; with a minimum temperature of 50°. Repotting should only be done when it is absolutely necessary. *T. H. Everett.*

ERANTHEMUM PULCHELLUM.

The genus Eranthemum includes many plants well worthy of cultivation, and the above species is one of the best for winter flowering. Eranthemum pulchellum is a soft-wooded stove shrub, and the flowers are borne in spike-like clusters of a rich metallic-blue.

Cuttings root readily if taken in the spring. They should be placed in small sixty-sized pots containing a sandy compost, and rooted in a propagating case or hand-light in a warm house. When the plants have become well-rooted, they should be transferred to forty-eight-sized pots, using as a rooting-medium a mixture of fibrous loam and leaf-soil, with sufficient silver sand to render the texture porous.

After potting the plants place them in a house having a temperature of from 60° to 65°, on a bed of moist ashes, and allow them sufficient room to enable the syringe to be used freely amongst them. As the plants advance in size and the pots become well filled with roots, shift them into twenty-four-sized pots, in which they will flower, using a similar compost as before, but with a little well-decayed horse manure added. When the plants have become well-established in these pots feed them liberally with liquid manure, varying this with an occasional dusting of Clay's fertiliser, but discontinue feeding when the flowers show signs of expanding.

After flowering, gradually withhold water to allow the plants a slight rest. Having been sufficiently rested, prune them and repot them, taking away as much old soil as possible without injuring the roots. They may then be accommodated in smaller pots, and grown on again as advised for young plants.

Eranthemums, when well-grown, will attain a height of fifteen inches to twenty inches, and produce a wealth of rich blue flowers in winter, and often well into the spring.

MOSCHOSMA RIPARIUM.

This beautiful winter-flowering plant is seldom seen in private establishments, although when well-grown it is a fine subject for associating with Coleus thyrsoideus and Poinsettias; it comes into bloom when the Chrysanthemums are just going over, and when flowers are scarce. Cuttings should be inserted in small sixty-sized pots in a very sandy compost and rooted in a propagating case in a warm house with a temperature of 60° to 70°. When the cuttings have become sufficiently rooted they should be hardened gradually, prior to placing them into fifty-four sized pots, using a rooting-medium consisting of fibrous loam, leaf-mould and coarse silver sand. When well-established in these pots the plants should be stopped to form bushy, even-balanced specimens.

After these growths have developed sufficiently pot the plant for the final time in six-inch or seven-inch pots, using a compost somewhat similar to that used before but enriched with old Mushroom bed manure.

After potting the plants place them in a house having a temperature of from 55° to 60°, as near to the roof-glass as possible, to keep them sturdy. About the middle of June a cold greenhouse or frame will suit them. Syringe the plants occasionally with tepid water during bright days, and give them frequent applications of manure water, varying this with occasional doses of soot-water, about once a week, but discontinue feeding when the flower spikes begin to expand. During September, remove the plants to a house having a temperature ranging from 50° to 60°, in which they will flower.

After flowering, gradually withhold water, without absolutely drying the plants off. When the growths have become sufficiently ripened, prune them to about one foot of the pot and place the latter on a warm shelf, to obtain cuttings for the following year's supply.

Moschosma riparium will remain in flower from six weeks to eight weeks if careful ventilation is given them during that period, and when cut the spikes will last a considerable time in water. *E. Baker, Garston Manor Gardens, near Watford, Herts.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM DEVONIANUM.

Among the many species of Dendrobiums, few have more beautiful flowers than those of D. Devonianum. These are borne on slender, pendulous stems, two feet to three feet in length, and they appear at the nodes.

The sepals and petals are creamy white, tinged with pink, and the petals are tipped with magenta. The lip is white with a purple margin and the base is of orange colour. The sepals, petals and lip are all fringed around the margins, and the flowers remind one very much of those of D. Falconeri, another Indian species, of more pendulous habit than D. Devonianum.

Cultural details for the two are similar, but D. Falconeri must be grown on a raft, or piece of bark and suspended, while D. Devonianum should be potted and have its pseudo-bulbs staked upright, to obtain the best results.

The compost should consist of Osmunda fibre, Sphagnum-moss, crocks and charcoal, allowing more moss than for Cattleyas.

As in the case of all Dendrobiums, overpotting must be guarded against while, in the actual potting, firmness should be the rule.

With the approach of winter, water should be withheld from the roots, to ensure ripening of the pseudo-bulbs, but these must not be allowed to shrivel from lack of water. Given this attention the plants will delight the grower with numerous flowers in the spring. *J. Robbie.*

FLOWER GARDEN.

PAEONIES.

The only possible defect to be urged against the beautiful modern forms of this old-world plant is a somewhat short flowering season, but this is a fault of many other garden favourites. The Paeony grows best in a rich soil rather on the light side, and it is very desirable that the ground should be prepared thoroughly, as the plants dislike disturbance and will remain for several seasons. Possibly the best time to plant is late summer or early autumn although if necessary, the planting season may be extended until March; Paeonies are not fastidious as to position, but I always endeavour to choose a somewhat sheltered situation in view of the damage to the heavy flowers which invariably results from high winds.

An annual mulching of well-rotted manure is beneficial to the plants and is best applied in early spring, also an occasional light forking over of the beds is desirable.

Support for the plants is essential, but formal staking should not be attempted; rather place brushwood amongst the plants for the purpose.

The plants are undoubtedly very effective when massed in a border, but irregular drifts or clumps in the mixed border will contribute gay flowers in June; the Paeony border may be rendered bright in spring by a planting of Tulips, Darwin sorts for preference, and, earlier still, a little colour may be obtained from Muscari, Anemone fulgens and similar bulbs. These bulbs will not in any way damage the Paeonies and even the Darwin Tulips may remain for a few seasons undisturbed. The older and less expensive Paeonies may be freely planted in woodland and in the wild garden, those with a delicious perfume near to the house, for these will be appreciated the most.

A continuous display of bright colours may be obtained from the Paeony border in summer and autumn by the use of Gladioli, Hyacinthus candicans or such Liliums as L. regale, L. Henryi, L. pardalinum and L. Willmottiae, the Lilies invariably wintering satisfactorily in Paeony beds. Not the least of the several attributes of the Paeony is the fine autumnal colour assumed by its foliage. As a cut flower, the Paeony lends itself to bold floral decorations and is, indeed, emblematic, with the Rose, of the English summer.

The foliage should not be removed from the plants until it is wholly decayed or until the stems part readily from the crowns, which should not be until late autumn; it is wise, in some districts, to afford a little protection to the spring growth, severe frost occasionally doing considerable damage, but apart from this susceptibility to injury of the young, tender growths the Paeony is remarkably hardy and almost if not quite, immune from insect pests. Varieties are numerous; a selection is best made from a collection in flower, wherein the single-flowered varieties will not be subdued by the more puissant doubles. The Rose, the Lily and the Paeony make a beautiful garden of themselves. *Ralph E. Arnold.*

SUTHERLANDIA FRUTESCENS.

The Cape Bladder Senna is an upright-growing plant with pretty, glaucous, pinnate foliage. It is well-suited for use as a "dot" plant in summer bedding schemes.

The scarlet flowers are about one inch to one-and-a-half inch long; they are of drooping habit, and resemble those of Clianthus puniceus.

The flowers are succeeded by inflated seed pods, not unlike those of Colutea arborescens. The species is a native of South Africa and may be raised from seeds, but the better plan is to strike cuttings of young shoots taken from stock plants in spring. These should be inserted in pots of sandy soil and placed in a close propagating case until rooted. Plants propagated in this manner flower when smaller in size than seedlings. *T. H. Everett.*

VERBENA BONARIENSIS.

This plant was first described by Linnaeus in his *Species Plantarum*, 20. He also described or recorded it in *Hortus Upsaliensis* and *Hortus Cliffortianus.* Dillenius described and figured it in *Hortus Elthamensis*, 406, t. 300, f. 387; so that the old-time botanists seemed to think much of this plant from Buenos Ayres.

According to Loudon, it was introduced to this country in 1732. It is most nearly allied to the well-known V. venosa, with densely fascicled, but smaller flowers than those of that species, though similar in colour. The lanceolate, wrinkled leaves clasp the stem, which rises up to a height of five to six feet.

I had some live specimens given me by Messrs. Isaac House and Son, and they closely resembled dried specimens I have seen from the Canary Islands. I believe they said the plant was not quite hardy, but Loudon described it as a biennial. Other specimens I had from a correspondent had been grown under glass, for the leaves were several times as large as those from the open. *J. F.*

TREES AND SHRUBS.

INDIGOFERA GERARDIANA.

ALTHOUGH this beautiful flowering shrub is usually recommended for clothing a wall space it may also be grown in the open in the southern counties. In anything approaching a severe winter the shoots will be killed almost to the ground level, but this is no real drawback as the best effect is obtained when the growths are pruned hard back annually. In the private garden a more serious objection may be that growth starts rather late in the year, so that there is an apparently barren space where the shrubs are grown. But this may be readily overcome by associating the shrub with an early, spring-flowering species or a dwarf evergreen. The best floral effect is obtained from Indigofera Gerardiana where it is given a sunny position, when it will make annual growths three feet to four feet in length and flower continuously from the present time until, at least, the end of September. The Pea-shaped flowers, which are borne in short racemes from the axils of the graceful pinnate leaves, are of bright rosy-purple colour. *A. C. B.*

PHILADELPHUS.

THIS genus of handsome shrubs with simple leaves and snowy-white flowers provides us with a valuable race of fragrant, July-flowering plants. They bloom profusely in almost any soil and situation, and the fact that they flower at a period when the great bulk of flowering shrubs has passed, gives them an added value, while for making massive effects in a short time few plants can equal them.

P. coronarius, the first introduced species, is the earliest to flower, but later-introduced species, such as P. latifolius and P. Gordonianus, together with recently-introduced varieties, carry the flowering season well through July.

Amongst recent introductions the variety Monster is one of the best of the tall growers. Of remarkable vigour, it soon forms a bush ten or twelve feet high, every branch being laden with wreathes of large, pure white, single flowers often as much as two inches in diameter. Bouquet Blanc is a variety of medium height producing a wealth of flowers in clusters along the branches. Lemoinei is a charming shrub of graceful habit, with flowers and leaves of intermediate size, and very suitable for the front of the shrubbery border.

Amongst the double or semi-double flowering varieties, Virginal is of outstanding merit, the individual flowers being very attractive. Boule d'Argent has large flowers of delightful fragrance, and Mer de Glace has silvery white flowers, borne in rich profusion.

WISTARIAS.

THESE vigorous-growing plants are amongst the most beautiful of our hardy climbers, and are excellent subjects for clothing walls. pergolas and bowers. Nothing could be finer than a well-developed Wistaria in full blossom in the spring of the year, its long, drooping racemes of slightly fragrant flowers hanging in tiers in a most graceful way. Wistarias grow freely in almost any aspect, are capable of covering wide areas and seldom fail to yield their flowers in rich profusion.

Their cultivation offers no great difficulties for, given a moderately good and well-drained soil, they grow freely from the time they are planted. When planted against a wall or on a pergola a system of cordon training has to be followed on which the production of short, sturdy, spur-like growths is encouraged. When their main growths are developed, subsequent pruning consists in the cutting back of secondary growths at the base of which flowering buds are freely produced. Plants grown on pergolas will need similar attention, but when growing freely over trees or large bushes they may be left to ramble at will.

There are several methods of propagation, the most satisfactory being by layering growths in sandy soil. Cuttings of ripened shoots may also be struck in the autumn, or shoots may be grafted indoors in spring on sections of root.

W. sinensis is the best known species and has been grown in this country for about a century. Its mauve flowers are borne in racemes about a foot long, and it may be expected to flower freely each spring. W. multijuga, introduced at a later period, is less well known but an equally desirable plant. It is particularly well adapted for planting on pergolas and bowers where the long racemes frequently reach a length of three feet, and are displayed to the greatest advantage. There are several varieties of this species, notably amongst which are alba, producing long racemes of pure white flowers and rosea with pale, rose-coloured blossoms, the racemes being produced with remarkable freedom. *A. P. C.*

CALLUNA VULGARIS.

THE Ling, or Scotch Heather, is too well-known to require any elaborate description. Throughout the country it covers large areas of moorland, common and hillside, and in the late summer it makes a glorious splash of colour in the somewhat sombre landscape.

As a garden plant it has its uses, more especially in the wilder portions, where it may be planted in large masses, while the white variety is valued for sentimental reasons.

In nature it is a variable plant, and many different forms may be found, differing from each other, both in the habit and colour of flower.

Provided the soil is free from lime, no trouble will be encountered in establishing Calluna vulgaris, and the only preparation necessary is deep digging of the ground and the careful removal of any Couch grass which may be present. Seeds afford a ready means of propagation for the type, but the better varieties and especially good forms should be increased by means of layers, or cuttings; these latter root readily if inserted in a cold frame during August or September, in a sandy-peat compost.

Reference to leading nurserymen's catalogues will reveal the existence of many fine named and distinct varieties, among which should be mentioned the dwarf forms, rendered interesting on account of their dense, cushion-like habit of growth, frequently not exceeding two to three inches in height. *T. H. Everett.*

PAULOWNIA RECURVA.

IN early June, Mr. John Banting, gardener to the Earl of Ducie, Tortworth, Falfield, Gloucestershire, forwarded us a box of Paulownia inflorescences, accompanied by the following note:—“The Paulownia sent is Wilson's 769; the tree was given to the late Earl of Ducie by the late Mr. H. J. Elwes, on January 8, 1911. It was about twelve inches high and was planted on the day it arrived. It has borne incipient flowers before, but they were not worthy of notice. This year the tree has produced beautiful flowers all over it (Fig. 20), and has been greatly admired by visitors. The beautiful blue flowers are produced before the leaves appear. This Paulownia is growing in ‘Gibbs' No. 1 Shrubbery,' and is now thirty-six feet eleven inches high, with a girth of trunk three feet ten inches at four feet from the ground.”

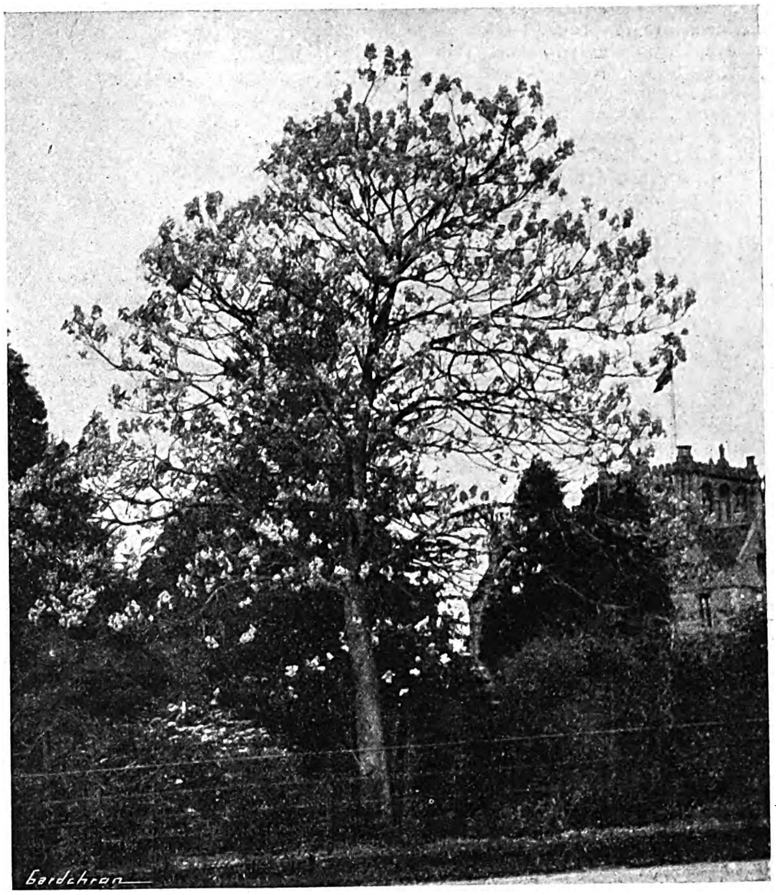


FIG. 20.—PAULOWNIA RECURVA.
A tree of this species growing in the garden of the Earl of Ducie, Tortworth, Falfield, Gloucestershire.

The inflorescences greatly resembled those of the well-known P. imperialis (syn. tomentosa), but they were far more beautiful than any of that species we have seen. On reference to *Plantae Wilsonae*, we find that Wilson's 769 is Paulownia recurva; the author states that the species is nearest to P. imperialis, from which it differs chiefly in its more densely fulvous-tomentose leaves, cordate or sub-cordate at the base, in the densely fulvous-tomentose outer surface of the calyx teeth which are not recurved at the apex and in the tomentose inflorescence. Save that the inflorescence of P. recurva is more imposing than that of the older species, it would be difficult to distinguish in the absence of foliage, but there can be no doubt that the newcomer is the finest from a garden standpoint, and all who have seen the flowers testify to their magnificence.

ROSE GARDEN.

ROSA HUGONIS.

THIS beautiful Rose is a native of Western China, and was first raised in this country at Kew, in 1899. It forms an attractive, spreading bush, six feet, or more, in height, its straight, regularly-branched stems being of a dark, purplish-brown colour, armed with sparsely-placed, slender prickles and numerous, short, stiff hairs.

The graceful, slender flower-bearing branches are practically devoid of prickles and hairs, and are clothed with attractive, rich green leaves, from two inches to four inches long, composed of from five to eleven oval or obovate leaflets, the margins of which are finely serrated, except near the base, where they are quite entire, while both surfaces are glabrous.

The flowers are borne singly on very short, leafy twigs, the flower-stalks being about three-quarters-of-an-inch in length; they are slender and glabrous, and about two inches in diameter, and of a rich, creamy-yellow. The petals are waved and crinkled, while the spreading, lanceolate sepals are fringed with down and slightly tinted with red.

Rosa Hugonis is one of the earliest of Roses to flower, and in mid-May was covered with a profusion of blossom. The species is quite hardy, free in growth, of pleasing habit, and very useful for planting in light soil. Its smooth, globular fruits, with the persistent calyx at the top, are of a deep, almost blackish red when ripe. *A. G. F.*

ROSE TRIALS AT BAGATELLE.

THE jury invited to examine the new Roses at the Rose Gardens, Bagatelle, Paris, met on June 11 at 9 a.m., under ideal weather conditions for the earlier part of the day, the morning being warm and dull, the foliage and blooms very fresh, after a gentle rain during the night. The light showed up the colours at their best.

On this occasion the Rose novelties presented in 1925-26-27 were under examination, and those of 1925 were the first inspected. The Gold Medal for the best French novelty was unanimously awarded to the variety Helen Fox, a seedling from Madame Melanie Soupert × Souvenir de Claudius Pernet; colour deep canary yellow, good long bud, flower of medium size, moderately full, with nice foliage and erect growth. This promises to be a very good variety for massing.

A First-Class Certificate was awarded to Comtesse de Castilleja, which on the previous occasion was given nine points out of the possible ten points (the highest number awarded), but at this time it was completely over, not one bloom showing. This is a very striking and novel colour—orange, flamed-vermilion, passing to golden coral; erect growth and nice foliage. It should be valuable for massing.

The Gold Medal for a variety from foreign raisers was, after a vote, given to Kardinal Piffl, of flesh-peach colour, a full flower, with short petals. Shot Silk received a Certificate.

The novelties sent in 1926 came next under review, and after examination it was decided not to award a Gold Medal to any of the varieties on trial from French raisers.

The First-Class Certificate was awarded to La Mye au Roi, a seedling from Duchess of Wellington × Pax Labor, from Mons. Bernaix. Among those from foreign raisers, the Gold Medal was given to Madame Gregoire Staechelin. This is of climbing character, semi-double and of pink shade. This award occasioned much adverse comment. Certificates were given to Marquise d'Audique and to Mevrouw G. A. Van Rossen.

The 1927 Roses were the last to be examined, and the work was done after a deluge. The awards for these will be made in 1928. In this series seventy-seven varieties were under trial, many being under numbers only. The more noteworthy of those possessing names were Thora, Francis Simms, Abol, Lady Margaret Stewart, Dame Edith Helen and Charles P. Kilham.

In addition to the Roses mentioned the following are worthy of attention, viz.: Cuba, semi-double, colour very striking and distinct; Goudvlender (Golden Butterfly), a semi-double, golden-yellow Rose with nice buds; it should be suitable for massing, being apparently floriferous and of good habit. Mrs. Fred Howard, in the way of Madame Ravary; Alice Stern, white, shaded cream, a large and well-formed flower of good growth and habit; and Souvenir de Madame Pidoux, a very free-flowering and erect-growing variety, producing large blooms of a golden yellow colour, shaded chrome.

The condition of the growth of the Roses, more especially those of 1926–27, was far from being satisfactory; indeed, in the majority of cases, the growths were so miserable that typical blooms could not be expected. Until a different mode of culture is observed, and reasonable soil conditions provided, little improvement can be expected. The soil is not by any means what one would desire for Roses, and to make matters worse, the space allotted to each five plants is quite inadequate and the growing of grass between each lot appears to be quite wrong.

It is to be hoped Mons. Forrestier's successor will have the opportunity of effecting improvements in both this and other respects so as to make the trials and awards worthy of Bagatelle. *R. N.*

ROSE MERMAID.

THIS variety is a hybrid of Rosa bracteata, and is so beautiful that it is surprising it is not more generally planted. It is very suitable for furnishing a pillar, or may be grown in bush form to make a large specimen; it is also ideal for covering a fence or for training on walls. In the colder parts of the country a wall may be necessary, although, so far, this beautiful Rose has proved hardy in the open, notwithstanding, one of its parents, R. bracteata, requires the shelter of a wall in the south. *C.*

ALPINE GARDEN.

CODONOPSIS OVATA.

THIS quaint plant is just commencing to bloom on the rock garden, and though not of striking appearance, it possesses a distinct charm, also a distinct and unfortunately a very unpleasant odour. By planting it high up on the rockery the beauty of its blooms can be admired and the unpleasant odour not noticed. It is a low-growing herbaceous plant, producing slender, trailing stems about one foot in length, the ends of which become erect to bear single, drooping, broadly campanulate flowers. The flowers are remarkably symmetrical in their formation, the broad corolla lobes curving into sharp points, while the glabrous, green sepals are acutely reflexed. The corolla is of the palest shade of blue, delicately veined with purple, while the throat on the inside is marked with two irregular bands of purple, below which and between the bases of the stamens are five orange blotches surrounding the blackish-purple base of an exceptionally large pistil.

The leaves are ovate, about three-quarters-of-an-inch in length, slightly hairy, recurved and short-petioled, being produced alternately or oppositely along the growths to within about two inches of the flower, from which point the stem is naked, except for a small, leaf-like bract.

The plant is a native of the Western Himalayas; it is easily propagated from seeds or cuttings, and flourishes in light, loamy soil. *S. A.*

HOUSTONIA COERULEA.

THIS delightful little plant enjoys a moist position in the rock garden and thrives splendidly in leaf-soil and sand on a rocky ledge or in pockets between large stones. The shoots are only a few inches high; the flowers, on one-flowered peduncles, vary in colour from light blue to white; the corolla is about half-an-inch across. The leaves are ovate-lanceolate, attenuated at the base, the radical ones spathulate, slightly hirsute.

The species was introduced from Virginia so long ago as 1785, and is figured in *Bot. Mag.*, t. 370. Propagation may be effected by division or by seeds.

This pretty little plant is beautifully figured in Maund's *Botanic Garden*, Vol. V.; it commemorates Dr. Houston, who resided for several years in the West Indies and was a correspondent of Miller, between 1728 and 1732. "Some engravings, by his own hand, of the parts of fructification of various new genera of plants, came into Miller's hands, who sent an impression of them, in 1736, to Linnaeus. Most of these plates were purchased, with Miller's herbarium and papers, by Sir Joseph Banks, who printed and liberally distributed an edition of them, with the Latin descriptions and remarks of the author, under the title of *Reliquiae Houstoianae*, in quarto, in 1781, a work which is now somewhat scarce."

The plant under notice was formerly cultivated in peat or peat and loam with marked success, and will thrive in such conditions, but I have found it eminently satisfactory planted in leaf-soil.

H. coerulea is delightfully pretty when grown in a pan, and is also excellent as a carpet to taller plants. *Ralph E. Arnold.*

ALYSSUM SPINOSUM.

ALYSSUM SPINOSUM is an interesting and little-grown rock plant, forming a small, spreading bushlet about six inches high. It should be planted in large drifts in sunny situations.

The foliage is silvery grey and of pleasing appearance on hot days. In early June the plants are hidden under short spikes of white flowers, the flower stems hardening into spines after the seeds have ripened.

There is also a rose-flowered form (var. roseum), which is similar in habit to the type. *L. Le C. T.*

HELICHRYSUM FRIGIDUM.

OF the numerous dwarf Everlastings, this species from Corsica is conspicuous in its dainty beauty, and also the difficulty which attends its culture.

It should be planted in the hottest crevice in the rock garden, in light, well-drained, loamy soil. It forms low mats of short growths densely covered with tiny leaves, which are so downy as to give the whole plant a silvery appearance.

In early summer the growths elongate and are terminated when about two inches long by single, snow-white, gold-centred blooms.

Cuttings of this plant should be rooted during July and wintered in a cold frame, while the parent plant should be protected from winter dampness with sheets of glass. Helichrysum frigidum makes a charming subject for the alpine house. *A. G. F.*

BULB GARDEN.

PUSCHKINIAS.

I WONDER that more amateurs do not cultivate some of the uncommon hardy bulbous plants of which the Puschkinias may be included, for they have a fairy-like grace which endears them to the lover of the smaller bulbs. Those who grow Scilla sibirica, for example, may well procure a few Puschkinias and plant them in front of the border, in the rock garden, or in pots, for the decoration of the home or the conservatory.

They are delightful little plants, only about six inches high, and having exquisitely coloured flowers of porcelain blue with deeper coloured lines. They vary a little in colour and some are white in their ground colouring, prettily lined with blue. There is some confusion as to whether P. scilliodes or P. libanotica are synonymous or not, and they are frequently classed as such in nurseries, but the point is really immaterial, and any Puschkinia, bought as P. libanotica or P. scilloides will give pleasure. There is a densely-flowered variety, listed as P. libanotica compacta, but I do not care for it. These Puschkinias flower in early spring.

Bulbs, which are not expensive, may be ordered now or in early autumn, and planted so soon as they arrive, at a depth of about an inch in heavy soil, and two inches in light ground. They do best in light soil and bloom early in a sunny position. Half-a-dozen bulbs in a six-inch pot are very pretty when in flower. The pots should be plunged outside until growth commences, when the plants may be taken indoors. *S. Arnott.*

ROCK GARDENING.

Nowadays the rock garden or alpine garden forms part of almost every private and public garden in every town of the United Kingdom, as well as in the United States of America, Canada and other English-speaking countries. On the continent it is not so universally adopted, but is popular, specially in the northern countries.

I quite remember, in 1877, being a young man and wishing to extend the culture of alpine plants, I ventured to put up an exhibit of alpine plants before the Société d'Horticulture de Genève. The Judges and Committee were surprised. They considered these wild plants as weeds and jocularly said: "*Jardin alpin—Herbe à lapin!*" The judges were rather perplexed to know how to treat the small collection and were of opinion it was not worth an acknowledgment, but one of the members of the Committee said: "Give him something in order to prove the interest the Society shows to young beginners, who must be encouraged." and they gave me four little silver spoons!

The day after, the *Journal de Geneve* had a nice little note about my plants; the Editor was the first to appreciate this small attempt of mine to acclimatise alpines and introduce them to the horticultural world. How rapid was the success that followed every one may see who has visited our Swiss gardens and also understands the importance the culture of alpines has attained in England during the past half-a-century. Mr. William Robinson did a great work in popularising natural gardening and the cultivation of alpines. My countryman, E. Boissier, the author of the *Flora orientalis* and of the *Flora of Spain*, was one of the first to take part in this movement, as he constructed a rock garden at Valleyres-sur-Orbe in 1850, probably the first of its kind on the continent. This was a great help to him in describing the plants he brought from various countries. He brought home plants or seeds and published many of his descriptions from these cultivated plants. But he did not "grow" alpines; his object was strictly scientific.

Alpine gardens built in the Alps *in situ* in the mountains are still younger; the first was founded at Bourg-St. Pierre, near the Great St. Bernard, and its object was firstly to help the scientific studies of Professor Romanes of Oxford, who asked the writer to help him with observations we could not undertake in our alpine garden. The Linnean garden was founded in 1889 and belonged to us till, during the war, in 1917, we gave it to the University of Geneva, who made there a laboratory for students of botany.

I was rather surprised, last year, during a tour I made in the United States of America to find so much enthusiasm for alpine flowers and rock gardening.

Lately I received a reprint of a note from a medical journal*: "The building of the rock garden in itself makes demands upon special faculties. A knowledge of the primary laws governing the growth of rock plants as to their individual soil preferences—calcophiles or calcophobes—is necessary; the arrangement of soil and rocks with reference to drainage and aesthetic effects is an art of no mean value; and above all the ability to make plants look natural and happy in an artificial reproduction of their environment may be either inborn or ultimately acquired after much experience of trial and failure. With some individuals it is a primal instinct. The collecting of new varieties means an increased interest in botany and floriculture, and in the geographical distribution of plants. As one grows in grace and in knowledge the creative desire develops, and the rock-gardener turns to the thrilling possibilities of selection and hybridisation. A new passion is born out of the old, and the remaining years of life are all too few for the sowing of seed produced by crossing and the determination of the results. And should a worthy new variety result—well, it is a victory worth a whole lifetime of effort! In this ultimate phase of the sport of gardening the highest thrills of a gambling game may be experienced. Finally, the literature of rock-gardening offers an abundant library, for winter and in-bed reading. The stories of plant collecting in the distant and out-of-the-way places of the world are as thrilling to the rock gardener as big game stories are to the hunter."

"Perhaps an explanation of the perennial youth of the man who preaches the culture of alpine plants can be found in his lifelong interest in alpine gardening. There are many other accounts of individual experiences in rock gardening that may be added to this library of literature on this subject, but they will ultimately be discovered by the adventurer in this field. We have mentioned rock gardening first in our contemplated category of recreations for physicians, because it seems to us to combine all the essential features of a perfect hobby; its satisfaction to the creative and inquiring mind, the pursuit of scientific knowledge, aesthetic appreciation, contact with the soil, physical exercise, life in the open, travel and literary appreciation. These interests, so manifold and varied, constitute a field so limitless in extent that all of the spare time of one's whole life might be expended in it without any possibility of exhausting its possibilities. Its cerebral stimuli are so different from those of the practice of medicine that frequent reaction to them, if only for a relatively short time, leads to that more perfect mental catharsis which is the aim of all forms of recreation."

I think this experience of the American author who is a professor of medicine is an encouragement for alpine gardeners, and I venture to place it before the readers of *The Gardeners' Chronicle*. *Henry Correvon, Geneva.*

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*Annals of Clinical Medicine, Vol. V., Sept., 1926.

HARDY FLOWER BORDER.

SCUTELLARIA BAICALENSIS.

This plant is the most handsome of the Skullcaps, and suitable alike for the rock garden or herbaceous border. It has been in cultivation since 1848, but has never become common owing, no doubt, to its habit of dying out during the winter.

It is a native of East Asia, and is sometimes termed S. macrantha, under which name it was illustrated in *Bot. Mag.*, t. 4,420. The plant is a perennial, and forms compact, bushy specimens with semi-erect, upward-branching stems, about one foot high; the stems are clothed with rich green, lanceolate leaves, the upper ones being smaller and narrower than the lower ones.

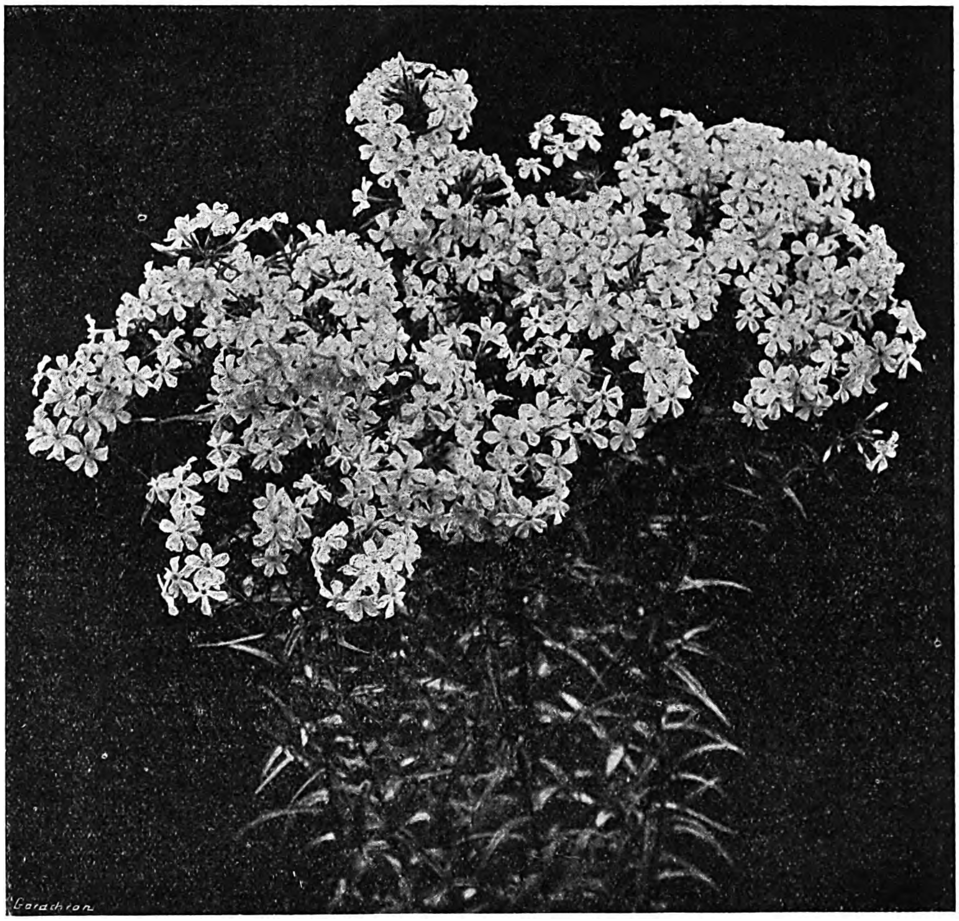

FIG. 21.—PHLOX ARGILLACEA.
R.H.S. Award of Merit, July 5. Flowers pale lilac. Shown by Mr. T. Hay, Hyde Park.
(see pp. 38 and 51).

The flowers are produced in closely-packed, terminal spikes during July, the erect, rich purple corollas being kneed (geniculated) at the base of the tube. The large hood of the corolla is incurved, while the broad lower lip is flat and notched.

This Scutellaria is quite hardy and grows freely in any good garden soil, while a stock of it may be raised from cuttings inserted during late July or August.

SCABIOSA GRAMINIFOLIA.

In a sunny position and in light, well-drained soil, this lovely herbaceous plant from the Southern Alps will flower throughout the summer. These flowers are of a rich lilac colour and are borne at the tops of slender, downy stems, from six inches to twelve inches high, rising above clumps of long, narrow, pale green leaves, both surfaces of which are clothed with silvery down, which silveriness, combined with the soft colouring of the flowers, imparts to the plant a very dainty appearance. *A. G. F.*

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THE TWO LABURNUMS.

IN Garden Notes from South-west Scotland (*Gard. Chron.*, June 18, p. 429), Sir Herbert Maxwell calls attention to the sparse flowering of the Laburnum this year. Cumberland has had the same disappointing experience. At any rate, I can hardly recollect such a miserable production of bloom as we have had here this spring. Failure, however, has not been universal, for I happened to see in a Leeds suburban garden some Laburnums during the flowering season and they were literally smothered in bloom—too much so, in my estimation, from the aesthetic standpoint. A Laburnum in the open is often a mass of flowers. In partial shade the blooming is less overwhelming, but more effective, with each raceme individualised and lengthened through less light ; for the great beauty of the Laburnum lies in the length of the raceme :—

> "Where the drooping light Laburnums
> Scattered gold through leafy gloom."

In the character of its flowering the Laburnum is only surpassed by the Wistaria, but this choice Papilionaceous shrub needs more warmth than we can give it. Except in favoured seasons and in snug corners, little bloom may be expected from it in the sun-shy north-west. Not so with the Laburnum ; it rarely fails to enliven our shrubberies, walks and woods in the month of May with its golden rain.

The ease with which it may be grown and its familiarity, perhaps, make us appreciate it less than we should, and prevent our planting it for the best effects. The Laburnum has, however, certain defects. When not in bloom there is nothing particularly attractive about it, whereas the Wistaria is worth growing for its handsome foliage alone. This can hardly be conceded to the Laburnum. Potentially, its leaves should gleam with gold in the autumn, but they rarely do so effectively, probably owing to the ravages they suffer from the leaf-mining caterpillar of one of the microlepidoptera. Extra weakening from a bad attack of this moth may account at times for a meagre display of bloom the following spring ? This pest is annoying in two ways. It not only makes the Laburnum unsightly in the summer, but passers-by at this season of the year are apt to become entangled with the caterpillars as they descend by their threads to pupate in the ground. Where the pest is rife one would hesitate for this reason to plant a pergola or an arch of Laburnums over a much frequented path.

The lay person in matters horticultural probably does not sufficiently realise that there are two distinct species of Laburnum in cultivation. They are so alike as not to be readily distinguished except by the observant. The one more usually seen is the Common Laburnum (L. vulgare), and is, without doubt, the more desirable tree. But the other, the so-called Scotch Laburnum (L. alpinum), has one merit. It flowers two or three weeks later, so by planting both kinds the flowering season of the Laburnum can be extended. Also without it we should not have had the most beautiful of all Laburnums, L. Watereri, which is a natural hybrid between the two species and surpasses both in wealth of bloom and in length of raceme. It can, of course, only be propagated artificially.

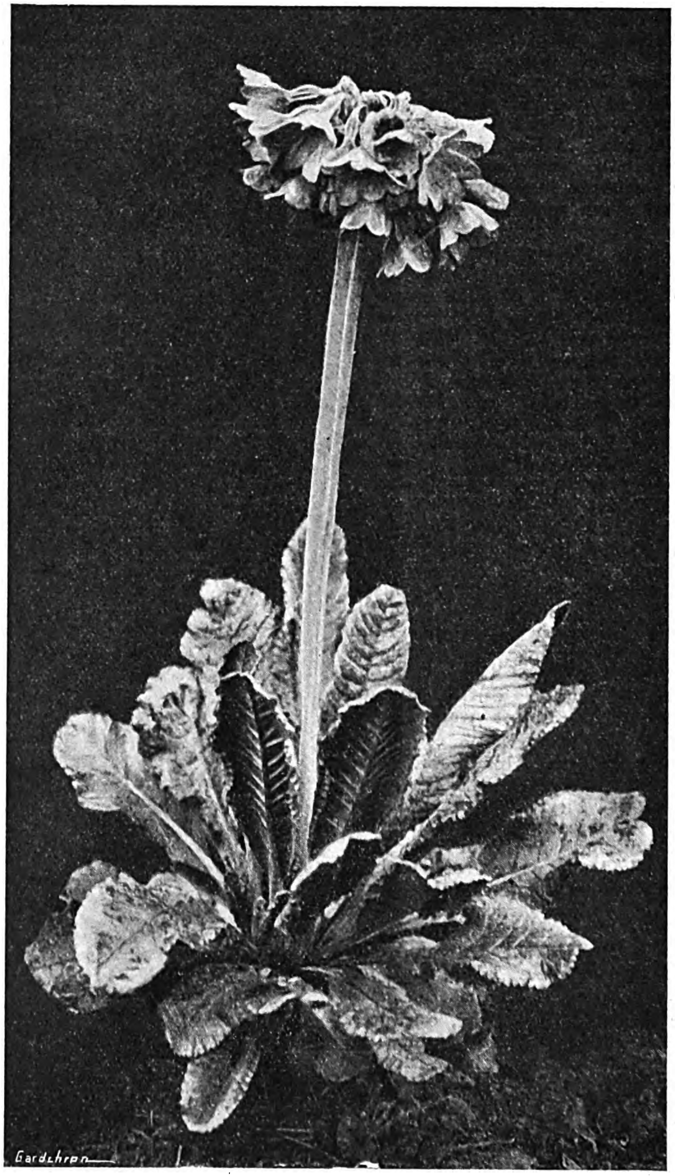


FIG. 22.—PRIMULA WALTONII.
(see p. 51).

The two species are easily recognised by differences in their foliage. The Scotch Laburnum has shiny, stiffer-looking leaves (leaflets), contrasting with the softer, non-glossy and more refined foliage of the Common Laburnum. A closer examination with the help of a lens shows that L. alpinum is nearly glabrous throughout. A few scattered hairs may be discerned on the stem, leaf-stalk and midrib. The Common Laburnum, on the other hand, is almost pubescent throughout. The numerous and closely adpressed hairs give a silvery appearance to the young stems and pods, as well as to the lower surface of the leaves. The hairy covering is, however, absent from the upper surface, and yet it is not shiny as in the case of L. alpinum, but dull. Why ?

A microscopical examination made the reason clear. The outer walls of the upper epidermal cells of the leaf of the Scotch Laburnum are nearly flat, giving an almost smooth surface, hence the glossiness. On the other hand, those of the Common Laburnum are convex, thus causing a roughening of the surface, and hence a mat appearance. Other interesting differences in the structure of the two leaves revealed themselves. The palisade tissue of the mesophyll is more strongly developed in L. vulgare, and the side walls of the lower epidermal cells are straight, while those of L. alpinum are a little wavy. Judging from these structural features, according to current interpretations, the former would appear to be better adapted to withstand dry conditions than the latter. How about their natural distribution ? Both belong to the alpine region of Europe. Laburnum alpinum is said to ascend to higher elevations than L. vulgare. Is it found more frequently than the Common Laburnum in districts of heavy rainfall or in wet situations ?

Besides foliar differences, there are others to be noticed between the two species. The dark streaks (honey guide) on the standard petal are considerably more marked in L. vulgare, adding to the beauty of the individual flower. The blooms of L. alpinum are on the whole smaller and deeper in colour (at any rate, in my specimens), and its pod is somewhat winged and ripens fewer seeds.

One wonders at times when evolution by sudden jumps in one direction (mutation) is advocated whether sufficient attention is given to such pairs of closely allied species, where the differences are slight but manifold. Among shrubs and trees familiar to us besides the Laburnums one might mention in this connection the two Hawthorns (Crataegus Oxyacantha and C. monogyna) the Cherries (Prunus Oxyacantha and P. monogyna), the Cherries (Prunus Avium and P. Cerasus), the Birches (Betula verrucosa and B. pubescens) and the Oaks (Quercus pedunculata and Q. sessiliflora). *J. Parkin, Blaithwaite, Carlisle.*

PLANTS NEW OR NOTEWORTHY.

PRIMULA WALTONII.

THE enclosed photograph (Fig. 22) shows Primula Waltonii (K.W. 6094) growing in my garden in Perthshire. This I consider one of the prettiest of the wonderful collection of Primulas found by Capt. F. Kingdon Ward in Tibet in 1914. My plant was raised from seeds sent home by him and has flowered this summer. The flowers are a wonderful deep, glossy, ruby-red colour, powdered inside with white meal and unusually large, measuring one-and-a-half inch across. *Andrew Harley, Blinkbonny, Kirkcaldy.*

PHLOX ARGILLACEA.

IN 1911, two American botanists, Mr. W. N. Clute, Editor of the *American Botanist*, and Mr. J. H. Ferriss, made a critical examination of the many species of Phlox which are to be found in the States of Illinois and Michigan, the result of their conclusions being published in volume seventeen of the *American Botanist*.

It had long been known that under the name P. pilosa there were grouped two plants which though showing only slight botanical differences were quite distinct in their period of flowering and decorative value. To the better plant was given the name P. argillacea, from the fact that it preferred the heavy clay lands. Under cultivation P. argillacea proved a fine garden plant, and in 1924 Mr. Clute sold the stock to Messrs. Meehan and Sons of Germantown, Philadelphia.

The species has become very popular in American gardens, photographs having been published showing huge plants with over one hundred flowering stems. In the States, the rich yellow colouring of the foliage in the late autumn has also been favourably commented on.

In the spring of 1926, Mr. Clute kindly sent me seeds of this Phlox, and the resultant plants (Fig. 21) are now in flower. In the open border it reaches a height of about fifteen inches, throwing up many flowering stems, which branch, and carry large quantities of small, silvery-white flowers. It is a pretty and attractive plant (see p. 38), easily grown, and may be quickly increased from seeds, cuttings, or by division. *T. Hay, Hyde Park.*

CRINUM AMABILE.

ABOUT five years ago, I received from Peru a consignment of bulbs, and among them one which was evidently a Crinum. I grew this on—it was much withered on arrival—and it flowered for the first time last year. I sent the plant, which by then was very large and growing strongly, in a sixteen-inch pot, to one of the Royal Horticultural Society's fortnightly meetings, and it was given an Award of Merit as Crinum sp. ? (see p. 97, July 31, 1926).

A flower and leaf were sent to the Natural History Museum, South Kensington, for identification, which was kindly undertaken by Dr. Rendle. It was soon decided that the plant was neither C. concinnum nor C. erubescens, as had been suggested, while Dr. Stapf thought that it might be C. amabile; as this plant was reported to be growing in the Singapore Gardens, it was decided to await the arrival of a flower and leaf from those gardens before giving a final opinion.

I have now heard from Dr. Stapf that he has had an opportunity of examining the material from Singapore, as well as that in the herbaria at Kew and at the Natural History Museum, South Kensington, and he has taken a great deal of trouble in comparing these with the material taken from my plant. He tells me that the Singapore specimen is not C. amabile, whatever else it may be, while he is convinced that my plant answers exactly to the description and dried flowers of the plant described early last century as C. amabile. This plant is said to be of Sumatran origin, and to have been in cultivation in this country over one hundred years ago.

So far, there is nothing extraordinary about the determination of this plant; the curious coincidence, however, is that the plate *Bot. Mag.*, 1,605, so Dr. Stapf informs me, was prepared from a plant grown about 1812 in Wormley Bury, which is now my own garden! After 114 years, the same rare plant appears again in the same garden, this time coming from a country thousands of miles from its native home! How it got to Peru is a mystery; whether it was found there in a wild state or taken for me from a garden, it is now impossible to trace. Dr. Stapf informs me that it has been reported as having been introduced into South America and the West Indies: it may still be in cultivation somewhere in this country—if so, I should be glad to hear from anyone who has it in his collection, and to learn its origin.

C. amabile may be a natural hybrid—I could not induce it to set seed, although I crossed it with other Crinums. It has, however, made a number of offsets, one of which I intend to try out-of-doors in a warm, sheltered corner, to test its hardiness.

C. amabile is a large Crinum with a scape about three feet high bearing a large number of fragrant flowers of a beautiful creamy-white, marked with purple lines. *Albert Pam, Wormley Bury, Broxbourne.*

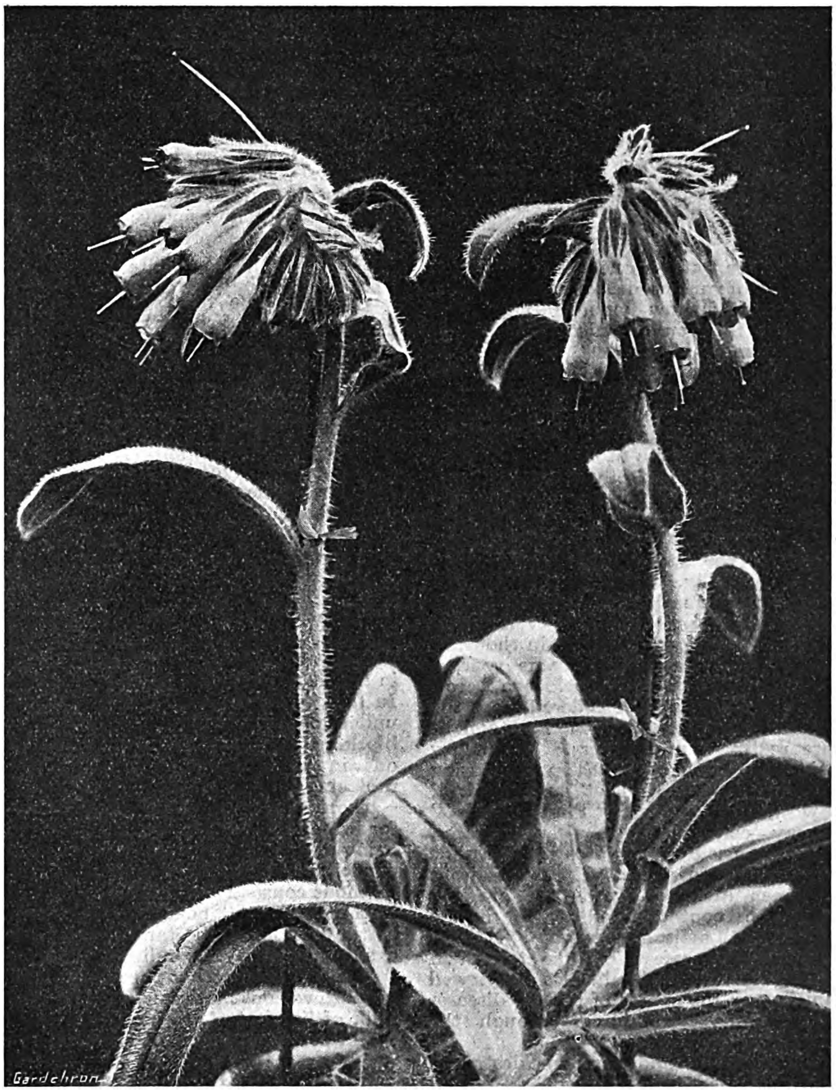


FIG. 23.—ONOSMA HOOKERI.

R.H.S. Award of Merit, July 5. Flowers blue. Shown by Lt.-Col. Messel.

(see p. 38).

OENOTHERA CLUTEI.

THIS fine Evening Primrose was discovered by Mr. Willard Clute when botanising in the Navajo Indian Reservation territory, Arizona, in 1919, and along with other new plant species found there, has been described by Nelson.

In the spring of 1926, Mr. Clute kindly sent me seeds which germinated freely. The first year the plants formed the usual rosette of crown leaves and made no attempt to produce flowering stems. It proved perfectly hardy, remaining green and healthy all through the trials of a London winter. This year the plants began to grow early, sending up a thick central spike, four feet in height, with many less stout, basal branches, the whole forming a very handsome plant.

The flowers are large, often four inches across, of a lovely soft yellow, borne in immense numbers, a mass of this plant producing a glorious effect. Although at its best in the evening, O. Clutei is much more attractive during the day than many species, as the flowers do not close altogether.

O. Clutei is probably a biennial, and according to Nelson, its nearest relative is O. Jamesii, but it is easily distinguished from that species by its precocious crown branches, its central stem and calyx-tube, its large, handsome flowers and remarkably short seed capsule. *T. Hay, Hyde Park.*

HORTICULTURAL WATER SUPPLIES.

It is now recognised in Public Health circles that the provision of an adequate and pure water supply largely determines the health of the community. This recognition has come about as the result of research work which has disclosed the fact that many diseases to which man is subject are water-borne. This again led to the discovery of various methods for sterilising water whereby it is now possible to ensure a supply free from injurious organisms and suitable for human consumption.

The subject of water-borne diseases which affect cultivated plants is of no less importance, and is one which has received attention within the last few years; its importance is probably more related to the growth of crops under glass than in the open. The fact that water may act as a carrier and disseminator of the spores of certain diseases has been established, and where disease runs riot from apparently inexplicable causes, the water supply should be examined biologically. According to Bewley and Buddin, their attention was directed to this important question as the result of a severe epidemic of "damping off" disease in the early part of 1919, and later, in the same year, a similarly severe attack of "buck eye" rot.

Generally speaking, and considered from the point of view of contamination, stagnant brooks are really natural sewers. As shallow wells receive the drainage from the neighbouring land, it is quite possible that such land, if infected with, for instance, "Phytophthora" disease, may contaminate the well water, and if this were used on Tomatos it is possible they may become infected. Tanks or wells in which green algae or weeds are growing may easily be contaminated with disease organisms. Deep, artisan-well water is considered purest and safest. Water to which drainage has had access should also be viewed with suspicion, as the spores of certain diseases are known to pass uninjured through the intestines of animals.

Infested refuse of all kinds should be destroyed by burning, as the spores may be washed down into the soil, and subsequently find their way into streams, brooks, surface wells, etc. Water tanks should be periodically cleaned out as a precautionary measure and disinfected. The addition of such a substance as potassium permanganate to the water storage at the rate of 4℔ or 5℔ per 1,000 gallons of water is to be commended as a commercial proposition.

Water supplies may also act as a carrying medium for nematode worms (eelworms) and their eggs, and once these gain entrance to a Cucumber or Tomato border, sterilisation, either by heat or chemicals, is the only reliable method for ensuring complete eradication.

INFLUENCE UPON SPRAYING.

In all wet-spraying operations water is used as the carrying medium, and consequently the nature and character of the dissolved salts it contains will depend upon the source of supply. In turn, these dissolved salts will greatly influence the spreading and wetting power of the spray fluid as well as the actual insecticide used, and also determine the extent of subsequent pump and nozzle trouble.

Rain and soft water are the best to use for spraying purposes, but, unfortunately, an adequate supply of either is not always available, hence it becomes necessary to use one or other of the following types, depending upon situation and locality, viz., river, stream, or surface water drained from cultivated land, shallow and deep well waters. The amount of hardness in each will depend upon the type of land drained, and the nature of the subterranean passage through which the water has to travel.

Generally speaking, river and stream waters are comparatively soft, but in chalky districts the water may be very hard. In shallow and deep well water there is a great variation in hardness. The use of either must be determined by the results of a chemical analysis; indeed, before any supply of water is used for such an important operation as spraying its composition concerning hardness and dissolved saline salts should be known.

Undoubtedly, many thousands of pounds are wasted annually through inattention to this point, by the formation of soap scum, by time wasted in releasing choked pumps, nozzles, etc., and ineffective results. The success obtained with any spray fluid depends almost entirely upon its spreading and wetting powers, other factors being equal; water by itself is a poor spreader, but when it contains dissolved hardness in the form of lime or magnesium salts, its power of spreading is further decreased. Hence it is necessary to overcome this resistance by the addition of soap or some other suitable substance.

When soap is used with hard water a scum is produced, and this scum will continue to be formed until all the hardness has been removed, so long as there is sufficient soap present. In other words, the soap is used up in softening the water.

METHODS OF REMOVING OR OVERCOMING HARDNESS.

There seems little doubt that it would pay growers, where large acreages are concerned, to adopt some form of water-softening treatment in districts where the water is particularly hard. In fact, in the Worthing district many growers under glass experience much trouble in pipe-blocking as a result of the hardness separating out in the boiler tubes, and the periodical replacing of such must be an expensive business.

There are various methods actually in vogue for water softening, the most expensive item being the provision of a settling tank of large capacity. The main object aimed at in most methods consists in the removal of the hardness in the form of a "chalky" sludge which settles at the bottom of the tank leaving the water in a suitably "soft" condition.

The previous methods are termed "chemical" because various materials, such as washing soda, milk of lime, etc., are used to throw down the hardness by a process of chemical re-action.

OTHER METHODS.

In the United States and Canada much attention has been devoted to other materials than soap to increase the spreading and wetting properties of insecticides; these have been given the name of "spray spreaders." They do not remove any hardness from the water used, but by a complex physical process are able to overcome the natural resistance of the leaves, pests and water, and so increase the covering power of the wash, and at the same time secure the maximum effect of the insecticide used. Substances such as milk, soluble caseinates, saponin, starch paste, etc., are all examples. In addition these materials possess the advantage, which soap does not, of forming compatible mixtures with most insecticidal and fungicidal ingredients.

For example, soap is not to be recommended for use with arsenates, lime-sulphur and copper sprays, on account of the risk of chemical re-action taking place and the production of substances which would be deleterious to the plants. High pressure at the spray nozzle is, of course, an important influencing factor on the success of spraying operations, in overcoming the resistance, in conjunction with the spreader. This should be in the neighbourhood of 100 to 150 lbs. per square inch.

A fact worthy of note is that when using lead arsenate it is not wise to have too good spreading, otherwise the "lead" runs off and accumulates on the edges of the leaf surface. A fine mist spray should be used for stomach poisons and fungicides, and a coarse nozzle for contact and cover washes.

Where the water supply is entirely unsuited to spraying purposes, such as in some parts of the Wisbech area, it might be well to seriously consider the adoption of dry-dusting methods, although this method is not to be advocated when the application of arsenate of lead is concerned. For the control of sucking insects and even young caterpillars, it is well worthy of trial, because, although perhaps the initial cost is compensated for in the saving of time and labour and water cartage, if properly carried out, dusting is superior in many respects to wet spraying, provided always that such dusts contain a high enough percentage of a recognised active ingredient, such as nicotine, or its equivalent in the form of nicotine sulphate. Where the sulphate is used either as a wash or incorporated in a dust, such as gypsum, etc., it is essential to have a suitable chemical present which will cause the decomposition of the salt in sufficient quantity to completely liberate the nicotine.

In districts where the only water supplies available for spraying contains large quantities of salt, such as certain districts in Cambridgeshire, it is absolutely impossible to use any form of soap with nicotine. Hence growers are compelled to fall back upon spray spreaders or adopt dusting methods.

There are two important spreaders worthy of special mention, viz., sodium caseinate and common size. The former is prepared by boiling ordinary fine-powdered milk casein with caustic alkali. This is not altogether a pleasant process, and can really only be considered for use on a large commercial plantation. The writer has found recently that ordinary dried milk at the rate of 1½ ℔ to 3 ℔ per 100 gallons of water, can be used with practically all the standard insecticides and fungicides without forming what is technically known as an incompatible mixture.

The use of calcium caseinate has been advocated extensively, both in the United States and here, until comparatively recently; it is made by grinding together a mixture of hydrated lime and milk casein, seventy-five per cent. of the former to twenty-five per cent. of the latter. This is usually mixed into a thin cream with water, using 2℔., and diluting this down with water to 100 gallons. t is an excellent spreader but it possesses this distinct disadvantage, that it is liable to cause considerable trouble by clogging the spray nozzles if used in conjunction with water containing much bicarbonate of lime.

The lime in the calcium caseinate in reacting with the bicarbonate forms chalk, and in so doing the casein is also thrown out of chemical combination in the form of a gelatinous scum, with the result already mentioned.

Another phase of spray spreaders is of interest, quite apart from their influence in increasing the wetting and spreading of a spray fluid. namely, the effect they have on suspensions in water of arsenate of lead and Bordeaux mixture. It is well-known that when using, for example, arsenate of lead, it is necessary to keep the spray well agitated in the spraying machine if an even distribution of the poison over the leaf surface is to be obtained.

Woodman has found that by dissolving ordinary size or glue in hot water and diluting this down so that the ultimate mixture contains about 1½℔ of glue in forty gallons of water, it is possible to maintain an arsenate suspension, thereby eliminating the necessity for violent agitation; and, at the same time, this material is not washed off the foliage by subsequent rains, and therefore greatly assists the adhesion of the arsenate to the foliage, indirectly increasing the efficacy of the poisonous deposit, as well as aiding in its economical use. *Theodore Parker.*

THE SIMPLE CONTRACT.

HARDLY a day can pass but that a contract in some form or other has been made by those who read these pages, and in order that the full benefit may be gleaned from these contracts three things must be understood by the parties to them. The first is how a contract should be made, the second the legal effect and force a contract has, and the third the remedies for a breach or breaking of a contract.

In the first place, all contracts consist of two distinct parts, (a) offer and (b) acceptance, and without these two no contract can be effectually arrived at, and though at times both do not appear to exist, every contract springs from the acceptance of an offer.

An advertisement in a seedsman's catalogue is an offer to all the world (or at any rate, to those people to whom he sends his catalogue) to sell his seeds at such and such a price, and when a gardener writes for a certain quantity of seeds he is accepting the offer made by the seedsman, that is to say, it constitutes offer and acceptance.

Contracts such as the above are examples of the general rule and are comparatively simple, but those contracts which are rather exceptional than general are the most frequent cause of trouble to the parties making them. Let us consider contracts made through the post; here the rule is that an acceptance dates from the time the letter is *posted* (not the time when it arrives), while if on the other hand it is desired to revoke an offer, revocation dates from the time it is brought to the notice of the person to whom the offer has been made (not from the posting of the letter).

Thus, if A writes to B offering him some plants at £5, and B on receipt of the offer writes and accepts, although A sends a telegram to B which arrives before B's letter reached A, a contract will have been made, and A must hand over the plants on receiving £5.

Another point of interest is the rule that a counter offer acts as a refusal of the original offer. This becomes important where an article is offered at, say, 20s., but the person to whom the offer has been made writes and says he will not take it at 20s., but will give 17s. 6d.; should this counter offer be refused, there is no right to compel the other party to sell at his original offer of 20s., since by making a counter offer the original offer was refused.

Then again, there is the rule by which the person making an offer cannot saddle the person to whom it is made with the obligation of communicating his refusal of the offer. Thus, where, as sometimes happens, A writes to B, with whom he has been trying to arrange a purchase: "Unless I hear from you further, I shall consider the tree's mine at £5. . . ,"; should B fail to reply to A—in consequence of the above rule—the latter cannot prove that a contract has been made, all he can show is that he has made an offer, he cannot show that his offer has been accepted.

In order, then, that a contract may be completed, there must be an offer and an acceptance, and when once an offer has been accepted there can be no recanting, for if, after acceptance, one of the parties refuses to carry out his share of the agreement, this amounts to a breach of the contract.

Where a man has suffered some loss through breach of a contract he can sue the other party to the contract for damages as compensation for his loss; in the case of sale of goods this is generally the difference between the price of similar goods at the time of the contract and at the time of the breach. If the contract was for the sale of something which could not be bought in the ordinary markets, and the loss of which could not be properly calculated in money, then the injured party might obtain what is known as "specific performance," that is, the Court will order the delinquent to carry out his bargain.

This kind of redress is, however, rarely met with, except when dealing with land, when it is the usual remedy. *Harold Sharman.*

FLORISTS' FLOWERS.

PINKS.

THE time has arrived when the work of propagating Pinks should be undertaken, for if the work is deferred until the plants pass out of bloom, the cuttings and pipings will become hardened. Where large numbers of plants are to be raised, they are best propagated in shallow cases furnished with lights. A well-drained position should be selected on which to stand the cases, and if on ash base, so much the better. Cases stood on ashes should contain about four inches of light, sandy soil.

The soil should be firmly pressed down with a board and about a quarter-of-an-inch of silver sand spread over the surface. In propagating it is a mistake to pull out young shoots from stock plants for "pipings," as some growers do. The better plan is to make cuttings of an average of about two inches to two-and-a-half inches in length, and to cut the base straight across close up to, but just under a joint. The base should be cut across between the leaves. This work should be done with a sharp budding knife so that the cut is made quite clean.

The soil and sand should be well-watered three hours at least before dibbling in the cuttings. The base of the cutting should be pressed into the sand that falls in when the hole is made. This will cause a few of the sand grains to enter the cross cut and encourage the cutting to strike quickly. When the cases are filled with cuttings, give the latter a good watering and after the superfluous moisture has drained away, put on the lights. If the cases are in a position where there is much bright sunshine, shade them and keep them close for ten days or so. Afterwards remove the lights and go over the cuttings carefully, making firm, by pressure with the fingers, any loose soil around them. If the soil is not firm at the base, the cuttings will be slow in rooting. *G. B.*

NEW SWEET PEAS.

THE business of raising distinct new Sweet Peas is becoming increasingly difficult. New colours are hard to find and improvement of the existing colours is a slow process. Judged by the Sweet Peas in the National Sweet Pea Society's Trials—admirably conducted this year by Mr. E. R. Janes, at Messrs. Sutton and Sons' Trial Grounds, Reading—there are few outstanding new sorts, while advances in colour shades are not numerous. Nevertheless, judged by the experience of many years and remembering that only twenty-seven years have elapsed since the first "Waved" or "Spencer" Sweet Pea came before the public, this popular annual flower has made advances in form and colour beyond all expectations.

The Floral Committee of the N.S.P.S. granted two Awards of Merit only, as a result of visits to the Trials on July 1 and July 8, as follow:

AWARDS OF MERIT.

The Prince (*Trial No.* 37).—A bold crimson variety, carrying large, shapely flowers on long stems. The variety grows well and appears to lend itself to the modern method of cultivating exhibition blooms. This new variety is somewhat like Sybil Henshaw, and as seen in the Trials may be regarded as superior in form and solidity of colour. Shown by Messrs. IRELAND AND HITCHCOCK.

Trial No. 84.—This unnamed seedling is of clear and effective colouring and will no doubt be classed as "cerise (scarlet)" It is distinct from any variety with which it could be compared at Reading, and was reserved for the Society's Gold Medal, which means that if it comes true in next year's trials, the Gold Medal will be awarded. Shown by Messrs. E. W. KING AND CO.

OTHER GOOD VARIETIES.

Mrs. A. Searles, the variety sent to the 1926 Trials by Mr. Damerum and then reserved for the Gold Medal failed to secure this high award, as it contained a colour rogue. Its brilliant colouring, however, has commended it to many Sweet Pea lovers, and all who saw it in Messrs. R. Bolton and Son's stand at the N.S.P.S. exhibition admired it greatly.

Pinkie, from Messrs. C. C. Morse and Co. (Trial No. 59), is a clean, bright pink variety of great promise and one that should prove useful for the garden as well as for exhibition.

Messrs. Bolton and Son's "No. 2" is a beautiful blue variety of which more is sure to be heard and seen. Messrs. Thos. Cullen and Sons' Blue Boy is also good in the blue class. Mr. J. Stevenson had a pretty and bright cerise pink sort in his Trial No. 17, while Trial No. 22, a light cream-pink variety from Messrs. Ireland and Hitchcock found many admirers. In the deep cream pink group, Messrs. C. C. Morse and Co. have a very pleasing variety—Trial No. 33—and their No. 35 is also good and a trifle brighter in hue. No. 51, Exquisite, from Messrs. Thos. Cullen and Sons, is a very pleasing shade of lavender. A salmon-pink variety from Messrs. W. Atlee Burpee and Co. (No. 81) promises to be a good sort for garden decoration.

Visitors to the Trials were pleasantly surprised at the extent of Messrs. Sutton and Sons' own trials of Sweet Peas, and equally with their extensive and skilful cultivation of flowers for exhibition. The plants in the firm's early, autumn-sown trials were wonderfully fine, strong, and smothered in flowers, and demonstrated the desirability of sowing the N.S.P.S. Trials earlier than has been the practice hitherto. *C. B.*

THE GOLD-TAIL MOTH.

(PORTHESIA SIMILIS, FUES.)

THE pretty larvae of this moth is very common at the present time, so common that it is doing a lot of damage to various fruit trees and also in the wild garden amongst Roses. Normally, the host plant of the Gold-Tail Moth is the Whitethorn (Crataegus oxyacantha), but it will eat the foliage of many other trees and shrubs. In several cases examined this season it has been noticed that when this pest is present feeding upon a Whitethorn hedge, if there happens to be a lone Rose bush in that hedge it is covered with the larvae of the Gold-Tail Moth, and hardly a leaf remains. When this occurs it looks as if the pest prefers Rose foliage to Whitethorn. This season, in the wild garden, Roses, both species and varieties, are being badly attacked, while in the fruit plantations Plums, Apples and Pears are also being damaged by the pest.

The life history of the Gold-Tail Moth is as follows: The moths appear in July and August, according to the district, they fly mainly during the evening and at night, and after pairing, eggs are laid upon the foliage of the host plant. The eggs are round, slightly flattened, and covered with the golden hairs from the anal tuft of the female; the incubation period is about ten days. The larvae are black, marked with red and white and very hairy; they feed together for a time and then separate and spread themselves over the host plant. Late in the autumn the small larvae seek winter quarters, hedge bottoms, fences, moss on trees and old sack bands being favourite positions. When a suitable position is found they spin cocoons of a dirty grey coloured silk, and they remain within these cocoons in a dormant condition throughout the winter. Many of the winter cocoons are often to be found close together within the same shelter. At the time when the foliage of the host plant is beginning to appear in the spring the Gold-Tail larvae leave their winter quarters and start feeding, and they are fully fed in June and early July, when they pupate in cocoons, upon the twigs of the host plant. The moths emerge about twenty-one days later.

In the districts where this moth occurs much damage is done to the plants mentioned. The damage is, perhaps, most noticeable upon cordon Pears, Apples and Roses. The moth appears to be rather local, but is extremely common in many districts where Whitethorn abounds, and in such places is liable to favour the garden with its attention.

The controls used against this pest are: (1) Destruction of the winter cocoons; all plants that have been attacked should have the old tying material removed and burned during early winter. On fruit trees a hay band placed in position during September would appeal to many of the larvae seeking winter quarters. (2) Spraying with a reliable nicotine wash early in the season would control this pest as well as the larvae of winter, tortrix and other moths. (3) On Roses, handpicking is generally sufficient, but it should be remembered that the hairs of the larvae of Gold-Tail are liable to cause painful swellings on the hands. Some persons can handle this pest without injury to the hands, but if any part of the face is touched with the hands before being well washed a bad rash on the face results. *Somerset.*

MARKET FRUIT GARDEN.

If "a dripping June puts all things in tune," the remainder of the summer ought, indeed, to be all that could be desired. The rainfall at my place amounted to 4·38 inches, which is three inches over the average for the month. Thus the long drought was effectually broken at last, and prospects for several important crops have improved in consequence. Bush fruits were greatly revived, Black Currants in particular showing a much better crop than at one time appeared likely. Unfortunately, the almost continuous rain of the last week of June hindered picking, and there is now danger that some of the fruit will get over-ripe. Apples have swelled well and, with me, are a heavy crop, many varieties requiring thinning. So far, most of the fruits are of excellent quality; but I am rather afraid that, after so much rain, scab may spread rapidly. There is enough evidence amongst my trees to show that scab disease would have been serious if no spraying had been done. The control, so far, is very good; but even now there are more slightly-scabbed fruits than I care to see. Curiously enough, Worcester Pearmain, which is usually one of the most scabby varieties, is remarkably clean this season, even on unsprayed trees. Bramley's Seedling, on the contrary, which used to be little troubled by the disease, is now bad in this respect, as most growers are finding. However, I have no cause to grumble, as I seem likely to have a crop of Apples as heavy as that of 1925, and of much better quality. These and Black Currants are almost all I have to depend on, as Plums are practically confined to Rivers' Early Prolific and Czar, both of which carry heavy crops.

CULTIVATION AMONGST FRUIT

The more I have to do with bush fruits the more convinced I become that root disturbance must be avoided at all costs. This year, cultivation amongst my Black Currants is almost a disgrace. The land was too wet to touch in March; and then it dried so quickly and became so hard that implements and hoes had little effect on it. Mere scratching to kill weeds was really all that could be managed. Yet the bushes came through the drought well and are looking better now than I have seen them for some years. This may be attributed chiefly, I think, to the fact that no forking was done in the winter. The weeds were hoed out of the rows in the late autumn, with a little of the soil, manure spread in the hollow so formed, and one shallow furrow ploughed on each side of the row to throw a little soil up to the bushes and cover the manure. Where the bushes were big, this soil had to be drawn closer to the stems with the hoes. The spaces between the rows were then levelled with a cultivator to fill the shallow furrows, and a shallow, open furrow finally drawn down the middle for drainage. Thus the roots were never exposed or disturbed; and the hoeing done since, during the drought, certainly was not deep enough to trouble them.

On a recent visit to the Long Ashton Research Station I was interested in a plot of Apples interplanted with Red Currants which has been allowed to grass itself down. The grass is kept under control by ducks, which are taken away only whilst the fruits are ripening. This treatment is, of course, well known to suit Apples; but it was surprising to find the Currants quite vigorous and happy. This may be taken as evidence that they appreciate the absence of root disturbance, and that grass does no harm to fruit trees, and even bushes, provided a generous supply of nitrogen is afforded. I am not trying to prove that cultivation is a mistake, and that a dirty fruit farm is best. I like to see my cultivated land clean; but I would rather have the bush fruit quarters weedy than with the soil drawn away from the stems by hoes, exposing some of the roots. What I do contend is that, however we may decide to manage the cultivation, the method should be such as will avoid root disturbance so far as possible.

Whilst in the West of England, I went over a most interesting fruit farm where cultivation is managed to perfection. Nearly all of it is done with tractors drawing Planet cultivators, disc cultivators, and other implements. Generally, the tractor draws two cultivators attached to a bar behind the machine, a plan which allows the soil to be stirred close up to the rows of trees and bushes, leaving very little to be done by hand. Deep work is never allowed, a depth of four inches being the maximum; and no ploughing or digging is done at any time. The grower admitted that the crops would do just as well if there were a few weeds, but he cannot bear the sight of them. He pointed out what he called a rather annoying thing: One row of Apples in an otherwise perfectly clean plantation had been allowed to grass itself down, being too close to a fence for the cultivator to be used. These trees looked better than the rest! On another fruit farm in the west, I saw the heaviest crop of Plums I have ever encountered. The trees are in grass, kept down and manured by pigs. The orchard went down to grass during the war, as so many did. The trees became poor until the pigs were introduced, after which they picked up and made a lot of new growth. I believe that established trees are best in grass in our climate, provided always that the grass is not neglected. It must be kept down either by grazing or by mowing, and there must be no lack of manure, particularly nitrogenous manure, because the formation of nitrates is greatly reduced under grass. It does not seem to matter whether the nitrogen is supplied in the manure from artificially fed animals or poultry, or whether it is given in chemical fertilisers where the grass is mown instead of being grazed.

RESULTS OF MANURING.

Those of my trees which are on grass land, both Apples and Plums, received as their only manure this season nitrate of soda at the rate of two hundredweights per acre, given a few weeks before blooming. They show the result plainly in the colour and size of the leaves, and probably in the setting of the bloom. Trees that were becoming stunted are, in most cases, showing a good response in the way of shoot and spur production, particularly where they are pruned fairly hard. As I have found before, the combined treatment will almost always impart vigour to the trees on grass which are becoming weakly. For bush fruits I had to depend mainly on a low-grade meat and bone-meal supplemented with sulphate of potash, a dressing which was shared by the young trees planted over the bush fruits. Black Currants received ten hundredweights per acre of the meat and bone. They have done well on this mixture, but better where a light dressing of farmyard manure was applied with half the amount of the artificials mentioned. This seems to be the best manurial treatment on my land. I think it gives rather better results than a heavier dressing of farmyard manure alone. Quite a light dressing of the latter seems to suffice, if helped out by artificials; but it is difficult to do without some natural manure. My soil contains very little potash, and results are generally poor unless this is used. Gooseberries are quite as big a failure without it as they are on the manurial experiment plot at Long Ashton. They simply cannot be grown at all without either this or farmyard manure, which, of course, contains potash. Red Currants also show marginal leaf-scorch unless they have dung or a mixture of fertilisers containing potash. Apples also show leaf-scorch. I ought not to have omitted potash for them this season, for there is a good deal of scorch in places; and I have found before that potash is a remedy on my soil.

UNUSUAL TROUBLES.

Two unusual troubles are widespread on Apples this year, and have, no doubt, been noticed by many others. One is a peculiar kind of weather injury, seen chiefly on the fruit of Bramley's Seedling. It takes the form of a ring of rough, corky tissue around the eye. The cause, I am told, is that water settled in the slight hollow which is found round the eye in this variety and was frozen there. It is a bad disfigurement, and will render a good deal of fruit unmarketable. The other trouble is a crinkling of the upper surface of the entire leaf, the under surface being broken and puffy. This, I am informed, is the result of a severe attack of Apple Sucker. *Market Grower.*

SEASONAL PESTS AND THEIR CONTROL.

POTATO BLIGHT.

A CONTINUATION of the climatic conditions such as we have experienced during June will undoubtedly cause an early appearance of this disease.

As in the case of most diseases caused by fungi, it is necessary to apply preventive rather than curative means.

These are so well-known as to require little comment, except that some of the preparations made "ready for use" are not always so effective as might be desired.

In order to obtain the maximum efficiency from the copper compound produced by mixing either copper sulphate and lime or soda, it is necessary to make the mixture just prior to using it.

It is also important to mix in definite proportions, otherwise the chemical nature of the precipitated copper compound is altered and this again reduces the efficiency.

To prepare Burgundy Mixture, dissolve 4 lbs. of sulphate of copper in a barrel containing about five gallons of water, then dilute to thirty-five gallons. Iron and zinc vessels should not be used for this purpose, otherwise the copper will be deposited in the form of copper plating. Dissolve in another vessel 5 lbs. of ordinary crystal washing soda in five gallons of water. When both the materials have dissolved mix the two solutions by adding the soda to the copper solution and well stir in order to complete the chemical reaction.

To prepare Bordeaux Mixture, dissolve 4 lbs. of sulphate of copper in five gallons of water and dilute to thirty-five gallons. Slake 2 lbs. of quick lime, and when the reaction has settled down, make this into a thin paste and dilute to five gallons. The "milk of lime" should be passed through a suitable sieve to remove any coarse particles; this should be added to the copper solution and well agitated as in the case of Burgundy mixture.

In preparing either of these mixtures it is most important to use only materials of guaranteed purity. The sulphate of copper if purchased as fine crystals will be found to dissolve easily, and it should be free from sulphate of iron.

The best Buxton lime is undoubtedly the most economical to use.

The precipitated copper compound produced in both mixtures should be gelatinous in character, and should remain in colloidal suspension for a considerable time; where the water is particularly hard it may be found necessary to slightly increase the amount of soda or lime in order to counteract the hardness.

In the application of either Burgundy mixture or Bordeaux mixture it will be found an advantage to use about 2 lbs. of dried milk to every 100 gallons of the prepared mixture. This greatly increases the spreading of the spray fluid and also assists adhesion.

Some authorities recommend mixtures containing two per cent. copper, but they appear to give very little better results than do the mixtures already mentioned, which make a one per cent. solution.

The same conditions apply as in the application of arsenate of lead, namely, they should be applied with a fine mist spray with plenty of nozzle pressure.

It is considered that these mixtures may act in either or both of the following ways. (1), that the carbon dioxide in the air liberates gradually small quantities of soluble copper, but of sufficient concentration to kill the spores of the fungus. (2), that the fungus spores, on alighting upon the thin film of copper compound secretes a juice that dissolves small quantities of the copper, which is gradually absorbed by the spore, thereby poisoning or destroying the contained protoplasm.

Millipedes.

One or two cases have been brought to the notice of the writer this season where millipedes have been responsible for an almost complete failure of a Cucumber crop, necessitating pulling up the plants and planting others.

Various methods were tried to eradicate the pests before replanting, and one which is worthy of mention consisted in dissolving in water calcium cyanide at the rate of eight ounces in ten gallons of water, and applying this to ten square yards of surface area of border. The effect was very remarkable; about ten to fifteen minutes after application the surface of the soil was covered with dead millipedes.

Twelve hours later the beds were opened and examined, and it was found that all forms of life were extinct to a depth of about nine inches. The beds were turned over and remade without any further additions and fresh plants put in five days after the application of the cyanide. The plants grew away quite well and showed no signs whatever of any injurious effects from the treatment.

Red Spider on Carnations.

Two large nurseries were visited last week where red spider is kept in absolute control by means of the naphthaline treatment. The main essentials to be observed when fumigating are:

1. Cut the blooms close prior to starting;
2. Maintain a level temperature of about 65° to 70°F.
3. Have a fair amount of humidity in the house.
4. Fumigate on either a dull day or a still, warm night.
5. Use a concentration of six to eight ounces per 1,000 cubic feet, vaporised in the lamps over a period of twelve hours.

Theodore Parker.

VEGETABLE GARDEN.

AUTUMN AND WINTER SALADS.

Frequent sowings of quick-maturing varities of Lettuce should be made from now until the end of August to provide heads for use up to Christmas. Choose a sheltered part of the garden for this crop, such as a south border from which early Potatos or Peas have been cleared. The ground should be forked over, made firm by treading, and the surface raked finely. Draw drills about ten inches apart and sow the seeds thinly. If the weather is dry, water the drills before sowing, as this will greatly facilitate quick germination.

Sow two or three sorts at the same time for the sake of variety and also to form a sure succession. Rake the bed over finely at the finish and label each sort.

So soon as the seedlings are large enough, thin them to six or eight inches apart, and draw a little fine soil up to them to keep them steady Hoe the soil on frequent occasions to keep down weeds and promote quick growth. Water the rows copiously in dry weather, preferably in the afternoons or evenings. Make one or two more sowings at intervals of a fortnight or so and treat the later sowings in the same manner.

Where plenty of cold frames are available, it is a good plan to sow the later batches in these as the plants can be protected from excessive frost or rain. Keep a sharp watch for slugs as cooler weather approaches, and dust around the plants with soot and lime, or place sharp, sifted coal ashes around them. Admit air freely by night and day; in fact, the frames should never be quite closed, or the plants will damp off wholesale if the weather is wet and cold.

Stir the soil frequently between the plants and they will grow rapidly. Cabbage varieties, such as Commodore Nutt and Golden Ball, are excellent for autumn salads, as they mature quicker than the Cos varieties.

Endive is an excellent substitute for Lettuce, when the latter cannot be produced easily, and the same treatment as regards sowing and subsequent culture will suffice, except that the plants should be allowed rather more room in which to develop. Blanching is easily effected by tying the plants around with broad bast, or gathering up the outer leaves and placing a six-inch pot over the plant. These methods will answer well provided the weather is open, but in frosty or snowy weather batches should be lifted as required and planted in frames or, better still, for later supplies, in a Mushroom house or any shed where they can be kept dark, using old potting soil in which to plant them.

Plant firmly and well water the roots, but take care to keep the foliage dry, or the leaves will damp off. Admit plenty of fresh air at all times. Never tie up the plants in the outdoor beds unless they are perfectly dry, and this is best done in the afternoons. There are several varieties of Endive, both Moss Curled and Broad-leaved; the latter is perhaps the best for winter use.

Endive is somewhat bitter unless thoroughly well-blanched. The centres of the plants should be a creamy colour when ready for use, and this may easily be attained in a short time if the plants are kept in absolute darkness. They should be examined occasionally to make quite sure that they are not damping; if a plant is affected with damping it should be removed at once, as it may affect the rest.

Chicory should be sown in April or May, as it requires a longer period of growth than the preceding plants. It forms a large, fleshy root, not unlike that of a Parsnip, and produces upright, bright green growth, somewhat like a Dandelion. Sow in rows made one foot apart, and allow the same distance between each plant in the rows. This crop will not need much attention except to be kept clean by hoeing between the rows. The better the plants the more edible material they will produce, therefore they should be sown in good, deep soil and allowed to stand well into the autumn to complete their growth. When the plants are required for use, they should be dug up as required and planted in pots or deep boxes fairly closely together and placed in a dark shed or a Mushroom house, as advised for Endive. The foliage should be cut off to within an inch or so of the crown. Water the plants liberally and they will soon begin to produce second growth. When they have made six inches or so of blanched growth, cut the heads off close to the crown. The roots may be thrown away as they are of no further use, and fresh batches introduced, according to need.

Quick-growing varieties of Radish may be sown in frames at frequent intervals during the early autumn. Sow thinly and well water the plants. They will revel in as much heat and moisture as is possible in cold frames at this season, therefore the frames should be closed early in the afternoon to conserve all the warmth available. Radishes require to be grown quickly at all times; they are very ornamental in salads, besides adding variety.

Mustard and Cress should be sown on the surface of loamy soil in boxes and germinated in a warm house or frame. Watering should be done with a fine-rosed can, and the seed-box covered with a piece of glass and paper until germination takes place. Sow at intervals of a week, putting the Cress seed in a day or so before the Mustard seed. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Robert Fortune.—I crave space in your valuable columns for the following request: Have any of your older readers any personal recollections or correspondence of Robert Fortune, who died in Brompton in 1880? From the forties onwards, he was a valued contributor to *The Gardeners' Chronicle*. I am engaged in writing his life and an account of his travels in China, but find it difficult to get in touch with his personal life. The points on which I am particularly anxious to obtain additional information are as follow: his early life prior to 1840; his latter life after 1862; a photograph or drawing which would give some idea of his appearance; any personal recollections of his character. If any of your readers can supply this information, they will earn the gratitude of *E. H. M. Cox, 12, York Terrace, London, N.W.1.*

Deterioration of Strawberries.—On page 440, Mr. Middleton asks for other readers' observations on the deterioration of Strawberries, and refers to neglected patches left alone for some timing recuperating. In such patches that I have seen, it is the young runners thrown out the previous year that are vigorous and produce flowers and fruits. There is usually very little trace of the original plant or, if the first runner produced from it is still alive, it is usually barren. I found a neglected patch of runners on taking charge here, and transferred the best runners to a cultivated part of the garden, but they absolutely refused to root in the soil. This I attributed to the amount of coal ashes dug into the garden by my predecessor. While in charge of a garden in Sussex, where Strawberries grew and fruited in abundance without the least sign of deterioration, my nearest neighbour—on the same kind of soil—could not get a crop at all. On looking round his place one day in winter, I noted coal ashes strewn all over his vegetable quarters, which he said was to ward off slugs. I pointed out to him then that that was the reason he was not successful with his Strawberries. Where abundance of farmyard manure and leaf-mould is used in gardens, Strawberries grow luxuriantly and produce sufficient foliage to keep the nets above the fruits without any other support. In my opinion, scarcity of manure (cow dung, especially) and the mistaken idea that coal ashes are beneficial in a garden, are the main causes of deterioration. *Grigor Roy.*

Embothrium coccineum from Cuttings.—I have been wondering if any of your readers have ever been successful in striking Embothrium coccineum from cuttings; if so, I would like to know how they have succeeded. I know the plants grow freely from seeds and that the stage from the seed pans to pots is a critical one. The following may be of interest, and is quite authentic. A few years ago, I sold a farmer a plant of Embothrium coccineum in a pot. He planted it in his garden and after a few years' growth some fair sized branches were broken off during a storm; not realising the difficulty of rooting this plant from cuttings, he simply put in these branches, as he would have done with a Privet or Laurel branch, and they grew into fine plants! Have any gardeners had a similar experience? *J. G. Treseder, The Nurseries, Truro.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, June 17, the members of Committee present were: Messrs. J. B. Adamson (in the chair), C. Branch, A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, J. Evans, A. Keeling, J. McCartney, D. McLeod and H. Arthur (Secretary).

First Class Certificate.

Cypripedium Astarte, Bridge Hall var. (*Psyche* × *insigne Sanderae*)—A beautiful round flower. From Mrs. Bruce and Miss Wrigley.

Awards of Merit.

Epi-Cattleya Nabo.—From Mrs. Bruce and Miss Wrigley; *Odontoglossum Towneley* (*Lambeauianum* × *Col. Leith*).—From J. B. Adamson, Esq.

Groups.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Silver Medal was awarded. It contained Masdevallias Carderi and Calura; Dendrobiums Arachnitis and atroviolaceum; Vanda cristata; Odontoglossum eximillus, Odontioda Laura, Hexadesmia crurigera, and Cypripediums in variety. Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were also awarded a Silver Medal for a group that included Cypripedium Astarte, Bridge Hall var., Epi-Cattleya Nabo, Dendrochilum latifolium, Oncidioda Bruceae and Miltonia Hyeana seedlings.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), showed Miltonia Bleuana var. Reine Elizabeth (magnificent flowers), M. Hyeana and M. hybrids; Odontoglossum St. Georges, and Anguloa Cliftonii.

Messrs. Cypher and Sons exhibited a group to which a Silver Medal was awarded. Cypripedium Parishii, C. grande atratum, C. St. Alban, C. Harrisianum superbum, C. Geo. Kettle, C. callosum Sanderae, Miltonia St. Andres and Vanda teres were leading features, Messrs. Charlesworth and Co. contributed Odontoglossum Amabilicity, O. Britannia and O. Omega, various Odontiodas, Miltonia Bleuana and M. Charlesworthii. Messrs. Keeling and Sons showed Brassia longissima, Masdevallia Bocking hybrid and Miltonia hybrids.

Annual General Meeting.

Captain W. Horridge, M.C., presided at the annual general meeting, when the report and balance sheet were adopted. Samuel Gratrix, Esq., was appointed President for the ensuing year, and the Executive Committee was re-appointed. The Awards Committee was re-elected with Mr. G. V. Llewelyn in the place of the late Mr. H. T. Pitt, and Mr. W. J. Morgan in place of the late Mr. E. W. Thompson. Mr. R. Ashworth was re-appointed Hon. Treasurer, and Mr. H. Arthur, Secretary. The prizes were presented to the successful exhibitors as follow:—J. J. Bolton's Trophy to S. Gratrix, Esq., gardener's prize to Mr. C. Branch; Messrs. Sanders' prize to J. B. Adamson, Esq., gardener's prize to Mr. J. Howes; the last-named gentleman and gardener also won the Charlesworth, Cowan, Cypher, Evans, Gratrix and McBean prizes, and the Horridge Challenge Cup. Messrs. Armstrong and Brown's Trophy went to S. Gratrix, Esq. (gr. Mr. C. Branch); the Botanic Society of Manchester's Silver-Gilt Medal to Mr. J. Howes, and its Silver Medal to Mr. A. Burns; Mrs. Smith's prizes to a gardener were won by (1) Mr. J. Howes; (2) Mr. A. Burns, and (3) Mr. C. Branch. The Society's Gold Medals were presented to The Hon. G. E. Vestey and Mr. G. V. Llewelyn.

The next meeting will be held at the Great Flower Show at Stanley Park, Blackpool, on Wednesday, July 20, 1927.

The Secretary reported the death of G. F. Moore, Esq., of Bourton-on-the-Water, a most enthusiastic lover of Orchids, and one who, as a raiser and grower of Cypripediums, possibly held the position of having the finest collection of these plants in the world.

ROYAL TUNBRIDGE WELLS HORTICULTURAL.

The annual show of the Royal Tunbridge Wells Horticultural Society was held on the 5th inst. in the Calverley grounds, an ideal venue. The numbers of both trade and competitive exhibits were largely in excess of those of previous years, and the Committee will have seriously to consider the extension of space for future exhibitions. The large, up-to-date pavilion and marquee were uncomfortably crowded early on the first day. The gangway space was quite inadequate and did not allow visitors a fair opportunity to inspect the exhibits.

The Silver Cup and premier award for the best trade display was won by Mr. Geo. I. Adams, Tunbridge Wells, who filled one end of the large tent with a display of herbaceous perennials, Gladioli, alpines and Violas. A model of an estate was included. This showed in their true proportions, a hard-court, orchard, kitchen garden and lawn, together with residence and outbuildings. The model covered an area of 240 square feet.

Messrs. Charlton and Sons, Tunbridge Wells, were adjudged to have the second best trade exhibit covering 1,000 feet of space and including a fine collection of one hundred varieties of choice hardy trees and shrubs in pots. Gladioli, Delphiniums and other perennials helped to make an attractive exhibit, Sweet Peas included the new Linden Rose, a smaller and paler flower of the Charming type.

Messrs. R. Wallace and Co., Ltd., Tunbridge Wells, were awarded the third prize for an exhibit arranged in an outside tent, including English Iris, Ixias, Lupins, Anchusas and other perennials. The small tent in which this exhibit was staged was flanked by two beds filled with small shrubs in pots. Messrs. C. Engelmann Ltd., Saffron Walden, were awarded a Gold Medal for Carnations.

Messrs. Hollamby, Groombridge, were awarded a Gold Medal for an exhibit which comprised collections of trees and shrubs and herbaceous perennials.

A Gold Medal was also awarded to the Chez Nous Nurseries, Newick, Sussex, for alpines, dwarf Japanese trees and shrubs, Cacti and perennials.

Messrs. George Bunyard and Co., Ltd., Maidstone, put up a collection of Roses and herbaceous perennials and were awarded a Gold Medal. Gold Medals were also granted to Mr. F. Webber, Tonbridge, for a group comprising perennials, Irises, alpines and Gladioli, and to Mr. W. C. Hollands, Tunbridge Wells, for Ferns and floral designs. Mr. F. A. Marshall the Treasurer of the Society, showed two large groups near the tent entrance and also received a Gold Medal.

Mr. W. A. R. Clifton, Willingdon, Eastbourne, contributed a group of Zonal Pelargonium blooms and was awarded a Silver-gilt Medal. A similar award was made to Messrs. Langridge and Co., Westerham, for Sweet Peas and Gladioli, and to the Crowborough Growers' Advertising Association for Cucumbers and Tomatos.

There were no exhibits in the nurserymen's classes for cut Roses. In the other open Rose classes, Mr. S. W. Burgess was placed first for eighteen blooms; Miss Hilda Rogers for twelve blooms; H. H. Scott, Esq. (gr. Mr. G. Edwards), for six vases; and Mr. S. W. Burgess for the best three vases. In classes for smaller growers Captain Snelgrove was the chief prize-winner. R. H. Martin, Esq. (gr. Mr. P. Morphew), excelled in the local class for twelve blooms.

An outstanding feature of the show was the table of fruit staged by J. J. Barrow, Esq. (gr. Mr. H. Kemp).

Sweet Peas were shown finely by F. W. Franks, Esq., Tonbridge (gr. Mr. W. Humphrey) and he followed up his recent successes by securing the premier award, closely followed by Col. D. P. Haig (gr. Mr. F. Comber).

Among other most successful competitors in the amateurs' classes were Messrs. P. S. Foster (gr. Mr. T. G. Knight), A. Grace, G. Mayer, J. J. Barrow (gr. Mr. H. Kemp), R. Allday, G. Miall (gr. W. Cross) and Paul Waterlow.

WOLVERHAMPTON FLORAL FETE.

Four of us—Mr. E. Beckett, Dr. Williams, Mr. W. H. Divers and the writer, set out for Wolverhampton on Tuesday, July 11. Pursuing our several ways during the tail-end of a vicious thunderstorm, we arrived at Paddington in good time to catch the 6.10 p.m. and annex corner seats in a smoking compartment. Some kindly spirit that watches over travelling horticulturists suggested taking the first service of dinner—a suggestion adopted unanimously. All went well until Leamington was reached, when Birmingham passengers were detrained and we were informed that terrific storms around the capital of the midlands had flooded lines, crumbled embankments and done other things that necessitated the diversion of our train to another route. For awhile the journey was continued, albeit somewhat slowly, and even in the rain and gathering gloom we admired the fertile vale of Evesham, and sympathised with growers whose Asparagus fields were runnng with water. But now our rate of travel slowed down under a "safety first" clause. With leaden feet the minutes and even the hours rolled by and presently the train was running slowly through an inland sea of water, apparently about two feet deep. Followed various stoppages and a long wait in sight of our objective, and at last, at 11.30 p.m., we arrived at Wolverhampton safely, but three hours late!

Rain fell heavily through the night and we were awakened about 7 a.m. on Wednesday by thunder and rain that continued with little intermission until 10.20, when we sallied forth and reached the spacious West Park in due course. Here, the water lay almost level with the tops of the grass blades, creating a swamp, and men were cutting grips through the lawns in an endeavour to drain away the water. Within the tents was a scene that is fortunately rarely experienced; the feet of busy men, delayed by the storm and hurrying to complete their exhibits in time, had churned grass and soil and debris into a morass of thin mud, ankle deep. In view of the difficulties they had encountered, the competitors were allowed an extra hour, so judging did not commence until about noon. Judges and pressmen had an extraordinary experience, but in due course the much-worried, much-to-be-pitied, perspiring and still cheery officials, got floor joists laid down over stretchers and thus made locomotion easier. The same four, accepting so much of the generous hospitality of the Committee as time would allow, foregathered again at Wolverhampton station, just in time to catch the 2.30 for town; about our lower extremities we were a disreputable looking quartette, but still maintaining that cheerfulness which good horticulturists show, no matter what the weather and other difficulties may be.

We sympathise deeply with the Wolverhampton authorities and trust that fine weather favoured the second and third days of their fete. They deserved success and had got a fine exhibition together; if they failed, financially, theirs was a splendid failure for which the elements alone were to blame. These same elements must also bear the blame if the following notes are fewer and less descriptive than usual, for, we would add, note-taking is no fun in a warm, saturated atmosphere, and with one's feet in a mud bath! Like our Wolverhampton friends, we have done our best under the circumstances.

Trade exhibits were numerous and beautiful, and we hope to publish the awards they received in our next issue.

Groups and Plants.

The entries in the large group classes produced a fine display of artistic and skilful cultivation. For a large miscellaneous group, covering a ground space of twenty-five feet by twelve feet, Messrs. J. Cypher and Sons won the chief award (£40) with a delightful exhibit, in which brilliant Codiaeums, noble Palms and graceful Humeas were charmingly arranged with Gesneras, Fuchsia Coralie, Begonia Rex, Lilium Henryi, Carnations, Dracaenas, Cypripediums, Dendrobiums, Anthuriums and Nandina domestica. The Cheltenham firm had a much bolder central arch than usual, but this was made to add to rather than detract from the elegance of their exhibit. Second prize was awarded to Sir G. H. Kenrick (gr. Mr. J. Macdonald), Edgbaston, whose bold background was a trifle heavy and needed more colour, but the front of the group was very pretty, the numerous Miltonias adding elegance and colour; third prize fell to Mr. W. Holmes, Chesterfield, who had a very bright display in which Crassulas and Ixoras were conspicuous features.

The Cheltenham firm was also successful in the class for a large group wherein plants in flower were not admissible; Codiaeums, Dracaenas, Aralias, Phyllanthus and Selaginellas were used to great advantage in this first prize arrangement. Mr. W. Holmes secured second prize, and Sir G. H. Kenrick the third.

The best fifteen plants in pots not exceeding ten inches in diameter, were those shown by Messrs. J. Cypher and Sons, whose leading subjects were Clerodendron Balfouri, Hydrangeas, Fuchsia Coralie, Statice, Lilium longiflorum and Codiaeums; Mr. W. Holmes received the second prize.

Always an interesting class at Wolverhampton, is the one for a group of one kind of plant and on this occasion the competition was unusually keen. The space allowed is sixty square feet. F. Sharpe, Esq. (gr. Mr. T. H. Catton), Tettenhall, won the first prize of £10 with finely-grown Astilbes; F. Sankey, Esq. (gr. Mr. R. Maybury), Wolverhampton, second, with Heliotropes; Messrs. J. Cypher and Sons, third, with Hydrangeas, and Mr. A. Falconer, Cheadle, fourth, with Gesneras.

First prize and Messrs. Blackmore and Langdon's Silver Challenge Trophy were won by Major S. Thompson (gr. Mr. J. White), Oaken, with a fine group of superbly grown Begonias, the blooms being of wonderful size and colour; Alderman A. B. Bantock (gr. Mr. W. J. Woodham), second, with very fine baskets of Begonias, but less fine, erect-growing sorts.

For a collection of plants and cut flowers arranged for effect on a table space of six feet by four feet, Messrs. J. Cypher and Sons led, showing Humeas, Codiaeums and Orchids in pleasing association; second, Mr. F. A. Sankey; third, Mr. W. Holmes.

In the group class not open to the trade, J. C. Swanson, Esq. (gr. Mr. F. W. Cook), Wolverhampton, secured the leading award with good plants pleasingly arranged; Francoas, Gloxinias, Celosias, Codiaeums and Calceolarias were all effectively displayed. The second award went to G. Mason, Esq. (gr. Mr. F. C. Clark), Penn; and third to Mr. Falconer.

Roses and Carnations.

Premier honours for a display of Roses on a space twenty-four feet by four feet were won by Mr. T. Robinson, Porchester, with a grand exhibit that contained pillars and sheaves of beautiful blooms of Mrs. H. Morse, Shot Silk, Lady Inchiquin, Madame Butterfly, Hortulanus Budde, Mrs. H. Stevens and Lord Charlemont, among other good sorts; Messrs. W. Lowe and Son, Beeston, second.

In a smaller class, Mr. George Prince led with a brilliant exhibit in which the flowers were placed rather too closely together; Mr. J. Mattock second, and Mr. G. Marriott, Carleton, third.

Mr. Mattock was also successful in the class for five baskets of Roses, with good blooms of Mrs. H. Morse, Golden Emblem, Lady Inchiquin, Mrs. T. Gilbey and Louise Criner; Mr. G. Prince had the finest three dozen exhibition blooms, with Messrs. Jarman and Co. second; Mr. Prince also led for a dozen new Roses, his set including Gwen Carr, J. Russell and Mrs. Barraclough.

For a basket of dark Roses, Mr. J. Mattock was placed first with Lord Charlemont, while for a basket of light roses, Mr. G. Prince was the most successful competitor, with Mrs. H. Morse.

Mr. J. Mattock had the best eighteen Rose blooms, and Mr. G. Prince came second.

Two very fine displays of Carnations were arranged, and of the two competitors, Mr. Charles Wall was the most successful, showing a fine arrangement of baskets, pillars and vases of Topsy, Enchantress Supreme, Salmon Enchantress, White Pearl, Dixie, Saffron, etc. Mr. C. Engelmann was awarded the second prize, and had superb flowers of Laddie, Brilliant, Nero, Sheila Greer and Saffron. Each of these displays occupied a space of twelve feet by four feet, and contributed a fine feast of colour and skilful arrangement.

Messrs. Lowe and Gibson showed the best group of border Carnations, staging beautiful flowers of Elaine, Skirmisher, Linkman, Mrs. Percy Smith and G. Griffith; Mr. C. White, Walsall, second; and Messrs. J. B. Grove and Sons, Sutton Coldfield, third.

Hardy Flowers.

There was but one exhibit of hardy border flowers arranged on a space twenty-five feet by seven feet, but any competitor would have found it difficult to beat Messrs. Bees' grand display of splendid Delphiniums, Eremurus Bungei, Lilium regale, L. Henryi, Gaillardias, Campanulas, etc. The Messrs. Bees were also the only exhibitors of a big group of Delphiniums, and here again they would have been difficult to beat, as their thirty huge sheaves of magnificent spikes of first-rate varieties, with a few smaller vases, made up one of the finest groups of these flowers we have ever seen.

For eighteen baskets or vases of Sweet Peas, the leading award was won by Sir Randolf Baker (gr. Mr. A. E. Usher), Ranston, Blandford, with fine flowers of Mammoth, Mrs. A. Hitchcock, Carmelita, Gleneagles, R. F. Felton and other popular sorts; Mr. G. H. Brookshaw second, and Mr. Charles Wall third.

Mr. C. Wall led for a dozen varieties of Sweet Peas, and Mr. W. Vernon was placed second, but these would have had to give way to Sir R. Baker but for the fact that this well-known grower had two bunches of Magnet in his otherwise excellent set. However, the last-named had the best six bunches, winning easily from Mrs. P. Adams (gr. Mr. W. Pugh), Kidderminster.

In other Sweet Pea classes, Sir R. Baker, Mr. J. G. Robeson, Banbury, and Mr. R. Challoner, Crewe, were successful prize-winners.

Mr. Sankey had the best group of Antirrhinums, W. B. Vernon, Esq. (gr. Mr. G. Egar), Wolverhampton, coming second, and Mr. E. H. Burden, Tettenhall Wood, third; the first prize set showed the better quality, and the second one the better arrangement.

Decorative Exhibits.

Mr. C. R. Lupton, Birmingham, was the leading prize-winner in an open class for a table decoration, showing a bright and dainty design of Gesnera, Calceolaria, Francoa and Anthurium flowers; Sir J. H. Kenrick, second, using Gloriosa blooms chiefly; Mrs. Reeve third, with yellow Roses.

In another class, professionals excluded, Mrs. Reeves led with a beautiful arrangement of yellow Roses; Mr. Reynolds, Tettenhall, second, with Madame Butterfly Roses.

Vegetables.

In the classes for vegetables, Lord Leconfield (gr. Mr. Streeter), Petworth Park, was the most successful competitor, other prize-winners being A. H. Hickman, Esq. (gr. Mr. J. H. Parker), Kidderminster; Mr. Falconer, Cheadle Royal Mental Hospital; and the Bishop of Worcester (gr. Mr. A. Fletcher), Kidderminster.

NATIONAL SWEET PEA.

The twenty-seventh exhibition of the National Sweet Pea Society was held on the 7th and 8th inst. in the Royal Horticultural Hall, Vincent Square, Westminster. The show was a great success, for the classes were well filled and the quality of the majority of the exhibits of high merit.

This Society is fortunate in having a large number of cups and trophies presented by the trade, corporations, the daily press and amateur lovers of the Sweet Pea for competition at these annual shows, so that the first prize in many of the classes included a valuable trophy. The schedule included fifty-seven classes, and all types of growers were catered for.

Traders were excluded from the first five classes which were amongst the most important in the schedule.

The Sutton Cup was offered in the class for eighteen vases, distinct, of varieties recommended in the Society's classification list and the Cup has to be won three times in succession to be gained outright. Only one competed, Sir Randolf Baker, Bt., Ranston, Blandford (gr. Mr. A. E. Usher), and he was worthily awarded the first prize. He had grand spikes of Royal Mauve, What Joy, Hebe, Coralline, Crusader, Powerscourt, Gold Crest, Mrs. A. Hitchcock and other choice varieties.

Five competed in the class for the *Daily Mail* Challenge Cup, and here the quality reached a very high standard generally. The winning collection, shown by Dr. Boyall, Minehead, also gained *The Gardeners' Chronicle* Medal as the best amateur's exhibit in the show, and his vase of Magnet was adjudged the best in the exhibition. His other sorts were Chieftain, Wild Rose, Constance Hinton, Lucifer, Youth, Royal Sovereign, Ivory, Picture, Purple Perfection, Charming, Powerscourt and Mammoth. The second prize was awarded to Major C. C. Keahlie, Calcot Grange, Reading (gr. Mr. A. W. Gown). This collection also was of superb quality and the stems were of great length and vigour. The bunches were beautifully even, and each flower in perfect condition. Notable sorts were Constance Hinton, Royal Sovereign, Valentine, Royal Mauve, Wild Rose and Purple Perfection. Third, Mr. F. W. Franks, Tonbridge (gr. Mr. W. Humphrey), who also showed grand spikes of popular varieties.

The class for six vases of Sweet Peas, distinct, to be selected from varieties recommended by the Committee in the classification list attracted nine competitors, and a keen competition resulted. The premier award, the Reginald Cory Cup, was awarded to G. L. F. Cook, Esq., Hayes (gr. Mr. H. Ebsworth), for splendid spikes of Charming, Chieftain, Constance Hinton, Grenadier, Powerscourt and Magnet; second, Mr. James E. Stevens, Weymouth, for grand flowers of Elegans, Gold Crest, Hebe, Royal Scot, Austin Frederick Improved and Charming; third, Mrs. Henry Williamson, Canterbury (gr. Mr. W. Langsdon).

The first prize for the best twelve vases of British-raised Sweet Peas, to include at least four varieties raised by Mr. J. Stevenson, were shown by Sir Randolf Baker, Bt., who included such varieties as Mammoth, Coralline, Model, Powerscourt, Purple Monarch, Venus and Gold Crest.

Mr. F. C. Woodcock offered prizes in a class for three vases, distinct, selected from specified colours, and the winner was F. T. Wheeler, Esq., Yarmouth (gr. Mr. F. Leonard). He showed fine spikes of Powerscourt, Gold Crest, Mrs. A. Hitchcock, Model, Daventry and Austin Frederick; second, Sir Randolf Baker, Bt., whose best sorts were Hebe, Mrs. A. Hitchcock and Gold Crest.

The Monro Perpetual Challenge Trophy for twelve vases, in not fewer than six varieties, raised or introduced by the exhibitor, was won by Messrs. W. E. King and Co., Coggeshall, with Vectis, Daventry, Gladys, Olympia, Leslie Rundle and Dinkie.

The best three vases of Sweet Peas, distinct, were shown by Mr. A. Johnson, Laceley, near Grimsby; second, Sir Randolf Baker, Bt.; third, Miss Russell, Canterbury (gr. Mr. C. W. Rendle).

Another interesting class was that for six vases of distinct varieties raised by the exhibitor, in which Messrs. E. W. King and Co., Coggeshall, were alone. They had the first prize for the varieties Olympia, Vectis, Patriot, Gladys, Leslie Rundle and Pimpernel.

The E. W. King Cup was offered for twelve vases of Sweet Peas, distinct, of varieties offered for sale in the autumn of 1926 or spring of 1927. This was a good competition in which seven took part. The premier award was made to E. Zachner, Esq., Sevenoaks (gr. Mr. A. W. Richardson), for a fine exhibit, the best sorts being Britannia, Silver Sheen, Royal Sovereign, Gladys, Olympia, Daventry, Pimpernel and Youth; second, Miss Russell, with exceptionally fine spikes of Coralline, Sybil Henshaw and Gleneagles; third, F. T. Wheeler, Esq., Yarmouth (gr. Mr. J. Leonard.)

The Burpee Cup, offered for six varieties, distinct, of which at least two sorts were raised or introduced by Messrs. Atlee Burpee and Co., was won by Sir Randolf Baker, Bt., with Delightful, Gladness, Model, Carmelita, Purple Monarch and What Joy; second, Mr. H. D. Tigwell, Greenford, with excellent flowers of Model, Silver Queen, Royal Mauve, What Joy, Royal Blue and Delightful.

Single Bunch Classes.

These included thirteen classes in various colours, and were educative in demonstrating which varieties are the best of their colours for exhibiting. The first and second prizes were awarded as follow:—

Blue: First, Sapphire, shown by Mr. F. W. Franks; second, Mr. E. Wilkinson, Basingstoke, with Mrs. Tom Jones.

Cerise or Cerise-Scarlet: First, Grenadier, shown by Mr. Franks; second, Charming, shown by Mr. J. E. Stevens, Weymouth.

Cream, Buff or Ivory: First, Ivory Picture, shown by Mr. Franks.

Cream-Pink: First, Venus, shown by Mr. Robert Sandford, Mildenhall, Ely; second, Picture, shown by Mr. E. Wilkinson, Basingstoke.

Pink: Hebe, shown by Mr. F. W. Franks; second, the same variety, shown by Major C. B. Keahlie, Calcot Grange, Reading.

Flushed on White, or Cream Ground: First, Queen of Roumania, shown by Miss Russell, Canterbury.

Lavender or Mauve: First, Powerscourt, shown by Mr. Franks; second, Austin Frederick, shown by Miss Russell.

Maroon: First, Maroon King, shown by Sir Randolf Baker, Bt.

Orange or Orange-scarlet: First, Colorado, shown by Mr. Franks; second, Wizard, shown by Major Keahlie.

Picotee-edged: First, Youth, shown by Mr. E. Zachner, Sevenoaks; second, Youth, shown by Mr. E. Wilkinson, Basingstoke.

White: First, Model, shown by Mr. Franks; second, Avalanche, shown by Miss Russell.

Any other Colour: First, Olympia (purple), shown by Mr. Franks; second, George Shawyer, shown by Miss Russell.

Amateurs' Classes.

The Counties Classes were somewhat irregular in the competition. There are five altogether, and each requires six vases of distinct varieties. The Southern Class was the most popular, for there were seven exhibits of which the best was shown by Mrs. Shirley Woolmer, Bracknell, with Mrs. Sidgwick, Ingatestone, second, and Mr. H. R. Pelly, third. In the Western Counties area, which includes South Wales, there were six exhibits, and here Mr. F. Churchward, Newton Abbot, was first with a fine collection. Sir Randolf Baker, Bt., was a good second, and Mr. J. E. Stevens was third. Five members competed in the Midland Class, and Dr. G. S. Leggatt was first, with vases of good size, form and colouring. Mr. J. G. Robeson, was second, and Mr. G. W. Beaufoy was third. Mr. J. H. Emmett was the only exhibitor in the Northern Class, and he was awarded the first prize for a very meritorious collection. There was no exhibit in the remaining District classes. The Irish growers experienced disastrous storms and were compelled to cancel entries. There was no entry in the newly-formed London County class, in which it was hoped that members residing in the London County Council area would compete.

The Bide Class, which is open to those who employ only one gardener, is always popular, and the most successful exhibitor was W. Martineau, Esq. (gr. Mr. C. Ball), Boxmoor, who had nine exceedingly good vases of Sweet Peas; C. H. Sale, Esq., J.P., Leamington, was second.

Competition was good in the class for members who employ only one gardener with occasional assistance, and here Dr. G. S. Leggatt was first. The new Hamilton Cup was won by Mr. J. J. Robeson, Banbury, with twelve excellent vases of Sweet Peas, while Mr. Wm. Huffey, Tonbridge, won the Hawlmark Cup with six equally good vases. The *Amateur Gardening* Cup did not draw quite so many exhibitors as usual, but the competition was very keen, and the quality of the blooms reached a high standard of excellence. Mr. Wm. Huffey was the winner, and Mr. F. J. Rogers, Isle of Wight, last year's winner, had to be content with second place. The Small Growers' Cup was won by Mr. H. W. Livington, Isle of Wight, with twelve vases of high quality Sweet Peas.

The class of recent introduction into the schedule, open only to those who grow their Sweet Peas unaided, retains its great popularity, and again the competition was very keen. The most successful exhibitor was Mr. H. W. Livington, and Mr. F. J. Rogers was a good second. A new class was that open only to members who had not previously won a first prize at the Society's shows. There were ten entries, and the blooms were of great merit. Mr. E. Smith, Cholsey, was first, with Mr. W. D. Sell, Bristol, second, and Mr. H. Ching, Devon, third.

The Novices' Division continues to be very popular, and each of the four classes had a large number of entries, and many really excellent spikes of Sweet Peas were staged. Mr. G. de la Perelle, Somerset, won the medal in the principal class. Other first prize winners were Mr. E. R. M. Speilman, Capt. R. A. Darney and Mr. A. Archer.

The various Ladies' classes for decorations with Sweet Peas made an attractive display, though there was nothing novel or of outstanding merit in the Dinner Table Classes or that for a decorated occasional table. The best dinner tables were arranged by Mrs. H. A. King, Kempston, in the amateurs' class, and by Miss Gladys Burt, Coggeshall, in the trade section. Mrs. A. D. Ruff, Luton, was first, both with a beautiful basket and a bowl of Sweet Peas in the amateurs' classes, and Mrs. Rundle, Canterbury, was equally successful with a vase of Sweet Peas, while Miss Gladys Burt was first with an artistic bowl of Sweet Peas.

NATIONAL ROSE.

The provincial exhibition of the National Rose Society was held this year in the pleasant town of Cheltenham, at the Montpelier Gardens, in conjunction with the local show, on July 6 and 7.

Considering the difficulties incidental to more or less continuously wet weather, the display was quite good; indeed, the bank of Roses formed by the exhibition of displays was a splendid feature and merited the admiration it received.

There were comparatively few new Roses, as raisers were evidently holding back for the London show on July 15. No Gold Medals were awarded.

Certificates of Merit.

May Wettern.—A Hybrid Tea variety of Madame Abel Chatenay type, but with rich salmon-pink colour and larger blooms than are found in the still popular old sort. This newcomer should be good alike for garden decoration and for exhibition. Shown by Messrs. Alex. Dickson and Sons.

Royal Scot.—A very bright and effective Hybrid Tea Rose with flowers of pleasing form and medium size. It is apparently a strong grower and suitable for bedding. The colour is deep orange-gold with bright orange-cerise shading on the outer sides of the petals. Shown by Messrs. Dobbie and Co.

Groups.

Mr. E. J. Hicks won the Jubilee Trophy for a representative collection of Roses arranged on a space thirty feet by four feet, with a very effective exhibit of pillars, baskets and vases of clear, bright blooms, his leading varieties being Emma Wright, Dr. Van Fleet, Betty Uprichard, Glory of Hurst, Joseph Liger, Edith Cavell, Independence Day—very fine—Lady Inchiquin, Shot Silk, Golden Emblem, Joanna Bridge, Angele Pernet, Queen Alexandra and a very fine pillar arrangement of Francois Juranville.

The first prize for a smaller group was won by Mr. George Prince, whose sheaves of I. Zingari, Betty Uprichard, Isobel, Gweneth Jones, Los Angeles, Scarlet Climber and Golden Emblem were particularly good. Mr. Prince also included a bowl of the pretty little yellow Rose Hardii. The second prize fell to Mr. J. H. Pemberton, who showed Pax, Penelope, Prosperity, Padre, Moonlight and other excellent varieties in good style. Mr. H. Drew was third.

Open Classes.

Mr. J. Mattock exhibited the best five baskets of cut Roses, thirty-six stems of each of five varieties; he won with fresh flowers of Mrs. H. Morse, Mrs. T. Gilby, Lady Inchiquin, Louise Criner and Mrs. H. Bowles. Messrs. A. Dickson and Sons were placed second with Sunstar, Lady Inchiquin, Betty Uprichard, Shot Silk and Lady Worthington Evans; Mr. H. Drew, third, with Mrs. H. Morse, Lady Inchiquin, Red Letter Day, Betty Uprichard, and Mrs. C. V. Haworth.

Mr. E. J. Hicks gained first prize for three baskets of Roses, his varieties being Emma Wright, Betty Uprichard and Independence Day.

The best two dozen varieties of Roses, from three to seven stems of each, in vases, came from Mr. J. Mattock, whose best blooms were those of Emma Wright, Golden Emblem, Mrs. E. Van Rossen, Mrs. Mocatta and Lady Roundway; Messrs. Frank Cant and Co., second.

Mr. E. J. Hicks succeeded in winning the leading award for thirty-six exhibition Roses in boxes, and a few of the leading sorts were Mrs. Foley Hobbs, Mrs. G. Shawyer, Charles E. Shea and Marcia Stanhope; Messrs. F. Cant and Co., second. Mr. Prince led for two dozen exhibition blooms, with Mr. H. Drew second; while for a dozen exhibition flowers, Messrs. Frank Cant and Co. won premier honours.

For one basket of exhibition Roses, Mr. G. Prince led with Mrs. H. Morse, and Mr. J. Mattock came second with Gwyn Carr. The best basket of Mrs. George Marriott was shown by Mr. J. Mattock, who had capital flowers. Mr. Drew was the most successful exhibitor of two baskets of exhibition Roses, winning with George Dickson and Mrs. McLennan.

Amateurs. Classes.

Mr. J. H. Hart, Potters Bar, was successful in winning the Amateurs' Jubilee Trophy for a display of Roses arranged on a space five feet by three feet. He had a capital exhibit in which large sheaves of Mrs. Dunlop Best, Mrs. Charles Lamplough, Mrs. E. G. Hill, Mrs. H. Morse and Augustus Hartmann were the leading features; the arrangement was good; second, Mr. George Marriott, Carlton; third, Miss Bedford Pim, Shoreham. Mr. G. Marriott had the best two baskets of flowers, and Mr. Gaiger the best single basket.

Mr. Hart was also successful with exhibition Roses on boards, leading for twenty-our blooms with a capital set. Mr. J. E. Rayner was first and Mr. Forrest second for twelve blooms, while for a dozen blooms, open to smaller growers, Mr. Alan Gibbs won the chief award: the last-named also showed the best single basket of mixed varieties.

Mr. Alan Gibbs had a capital set of six blooms, winning first prize with Hugh Dickson, Frau Karl Druschki, Earl Haig, Mrs. H. Bowles, Mabel Morse and Mrs. H. Morse; second, Mr. Bedford Pim; third, Mr. E. J. Baker. Mr. Alan Gibbs, Mr. R. F. Forrest, and Miss Hopcroft, won the prizes in the order given, for six blooms, in the class for those who had never won a first prize at a N.R.S. show.

Mr. F. Trinder, Mr. J. G. Orpen, Mr. N. Fletcher, Mr. E. C. Richings, Mr. H. Clarke, were other successful competitors.

Decorative Exhibits.

The competition was keen for the prizes in the class for a dinner table decoration of Roses. Miss Newsham gained the premier award with a bright arrangement of fine flowers of Independance Day, Mr. Courtney Page coming a close second with Emma Wright; Mrs. Colston Hale, third, with Angele Pernet, and Miss S. N. Zelley, fourth.

Mr. Courtney Page led for a bowl of Roses with lovely blooms of Roselandia; Messrs. Newsham second, and Miss Zelley, third Mr. Courtney Page was also first prize winner in the class for a vase of Roses, showing Shot Silk in fine style; second, Miss Zelley and third Miss Newsham. In the novice class for a bowl of Roses, Miss E. P. Jones, Miss M. F. Hopecroft and Mrs. Mackelroy, won the awards as placed.

Mr. J. Mattock had the first prize bowl of Roses (nurserymen) and also the best vase of Roses.

WINDSOR, ETON AND DISTRICT ROSE AND HORTICULTURAL.

July 9.—The thirty-fourth annual show of this Society, which was held in the Slopes of Windsor Castle, was the most successful of recent years. The entries were more than double the number of last year, and the quality generally of the exhibits was very high; it only required some exhibits of fruits to make it an ideal show. The rains of the morning ceased at midday, and there was a good attendance. As usual the arrangements worked smoothly, and Mr. J. Harding, the genial Hon. Secretary, and the Committee are to be congratulated on an enjoyable and successful show. In the opinion of the senior judge, it was the finest show held at Windsor during the past twenty-five years. Roses were the principal feature, while Sweet Peas, hardy border flowers, and vegetables were well shown, and there were many tasteful dinner table decorations. The trade materially assisted to make this very attractive show.

Open Classes.

The show at Windsor is first a Rose show and the handsome Challenge Cup, presented by His Majesty the King in 1919, is the rosarians' most prized trophy.

The King's Cup and a money prize is offered for the best collection of forty-eight Roses in distinct varieties, and Messrs. Frank Cant and Co. won it for the fourth successive time with an excellent collection of fresh and well-formed blooms. Their varieties included Mabel Morse, Countess of Lonsdale, Caroline Testout, Gladys Holland, The General, Mrs. Henry Bowles and Courage. Messrs. B. R. Cant and Sons were a good second, and their best blooms were Jules Bouche, Louise Crette, Lemon Pillar, Coronation, Gwynne Carr and Mr. George Norwood. Messrs. D. Prior and Son were third in this principal class.

Tea and Noisette Roses did not equal the championship class in quality. The blooms were rather small and weather-stained. The first prize was withheld and Messrs. G. Longley and Sons were awarded the second prize for a collection which included blooms of Mrs. Campbell Hall, Mrs. A. de Rothschild and Caroline Soupert.

Competition was very good indeed, in the class for trios of twelve distinct varieties, and here the chief honour was won by Messrs. B. R. Cant and Sons, who had splendid blooms of Lemon Pillar, Florence Forrester, Mr. Henry Morse, and two new varieties of great merit. These were The Belle, a shapely H.T. of perfect form, fragrance and pale lemon colouring with a pale flesh pink centre, and Alice, an equally good H.T. of deep rose colour. Messrs. Frank Cant and Co., were second, and their best trios were St. Helena, The Diety, Mrs. Henry Morse and Courage.

The best twelve blooms of any H.P. or H.T. Rose were those of George Dickson shown by Messrs. George Longley and Sons, and this fine exhibit contained the best Rose in the whole of the Show. Jules Gravereaux good quality, as shown by Messrs. D. Prior and Son, was the first prize variety in the class for twelve blooms of any T. or N. Rose. Messrs. A. Warner and Son had the best collection of eighteen bunches of Decorative Roses. They showed Golden Emblem, Lady Roundway, Red Cross and Madame Edouard Herriot in excellent condition. Mr. F. Spooner, who was second, staged good vases of Betty Uprichard, Ophelia and Marcia Stanhope.

Amateurs' Classes.

In this section the quality of the exhibition in the chief classes was very high. Dr. R. C. Turnbull, Colchester, had the satisfaction of winning the Windsor Challenge Cup for the third year in succession with twenty-four excellent exhibition Roses. His principal varieties were Lady Inchiquin, The General, George Dickson and Avoca. Mr. F. H. Fieldgate, Colchester, was second, and he had very good specimens of Mrs. Amy Hammond and Mr. G. Norwood. Dr. Turnbull also had the best six varieties, showing Florence Forrester, Mrs. C. Lamplough and Miss E. J. Hudson of high quality. Mr. C. H. Rigg, St. Albans, was a good second. Mr. W. E. Moore, Ickenham, was first with six T. or N. Roses, and, in the local classes, had the best twelve blooms of the same class of Rose. He also had the best H.T. and the best T. bloom in these classes.

Mr. F. H. Fieldgate won outright Lady Julia Follett's Challenge Cup with twelve particularly good varieties and also had the best twelve in the class for growers of less than a thousand plants. His chief varieties were George Dickson, Augustus Hartmann, Mrs. J. Laing and Mabel Morse.

Except in the two principal classes, Sweet Peas were not equal in quality to those of recent years, but Major Krabbe (gr. Mr. Gower), Calcot Grange, Reading, won the Prince of Wales' Challenge Cup with twelve magnificent vases. His principal varieties were Hawlmark Salmon, Constance Hinton, Powerscourt, Youth, Picture, George Shawyer and Wild Rose, Dr. R. C. Turnbull won the Aird Cup with twelve exceedingly good vases of such varieties as Magnet, Annie Ireland and Mrs. H. Wright. In the local classes there were a dozen or more exhibits of twelve vases in competition for Mrs. Beril Fortescue's Cup, which was awarded to Mrs. G. E. Marsh, Slough, whose collection included the varieties Picture, Youth, Constance Hinton and Pimpernel. In the Cottagers' classes Mr. C. W. Renn, Windsor, had six splendid vases of Sweet Peas.

Non-Competitive Exhibits.

In order to show their appreciation of the value of the trade exhibits, the Committee inaugurated a scheme of Medal Awards for non-competitive exhibits, with the result that trade collections were more numerous and varied than usual. Lady Carter offered a Challenge Cup, which may be won outright in three successive years or any four years, for the best trade exhibit. This year it was awarded to Mr. J. C. Allgrove for a very tasteful display of hardy border flowers. This included Eremurus, Delphiniums, Erigerons and Scabiosa in good varieties with Lavatera olbia and Iris aurea. In another tent Mr. Allgrove set up an attractive collection of Roses and another of hardy shrubs and border flowers.

A large space was filled by Messrs. Waterer, Sons and Crisp with a magnificent collection of Japanese Irises similar to that we admired at a recent show of the R.H.S. at Vincent Square. Mr. Wm. Yandall had a very large exhibit of his beautiful Violas and Pansies. The former included Pansy Orange Perfection, Lily Stark, W. H. Woodgate, Springwall Bronze, Mosley, Ideal and Mosely Perfection. Mr. Charles Turner grouped Palms, Standard Fuchsias, Heliotropes, Carnations and other plants very tastefully.

A good variety of Hydrangea Hortensia was associated with dwarf Polyantha Roses by Messrs. Wm. Cutbush and Son. Amongst the latter the new variety Golden Salmon was very conspicuous. Messrs. Hewitts, Ltd., had a large collection of Delphiniums amongst which the prominent varieties were The Shah, Dusky Monarch, Violet Queen and Lord Derby. Messrs. S. Ride and Sons had an extensive collection of fresh Sweet Peas. They included the varieties Youth, Charming, Charity and Winifred McLachlan.

Groups of Roses were staged by Mr. J. H. Pemberton, who included large vases of Paul's Scarlet Climber, Pax Variety, Los Angeles and Dorina Neave; Messrs. Wood and Ingram, who had Shot Silk, Christine, Souvenir de Claudius Pernet, and a large quantity of Angele Pernet; Messrs. Lund Bros., who displayed Marcia Stanhope, Lady Inchiquin, Mrs. Henry Morse and Madame Edouard Herriot; Messrs. W. E. B. Archer and Daughter, who showed the pretty Single Dainty Bess, Muriel and Joyous Cavalier; and Mr. George Lilley, who had arches of Polyantha varieties and vases of Mabel Morse, Betty Uprichard, Lady Inchiquin and Golden Emblem.

CHELTENHAM FLORAL FETE.

July 6 and 7.—Success is attending the efforts of the Cheltenham enthusiasts to revive the former horticultural glories of their beautiful town. The show held on the above dates in the Montpelier Gardens was a distinct improvement on the one of 1926, and the provincial show of the National Rose Society was an added attraction. Four large tents housed the exhibits, one being occupied chiefly by the N.R.S exhibition. Amateurs, of whom there are plenty in the Cheltenham district, came out well, and one tent scarcely sufficed to hold their exhibits of Roses, hardy flowers, Sweet Peas, Ferns, Begonias, Fuchsias, etc.; the keenness of the competition in this section augurs well for the future success of the fête. Messrs. John Cypher and Mr. C. Cassidy were moving spirits of the flower show, and they have a hard working Committee that is now becoming accustomed to the duties of management.

Cheltenham was *en fete* for the occasion, and miles of bunting were suspended between the fine trees that form avenues to the principal streets. Cloudy but fine weather occurred on the opening day, but the sun shone brightly when the Mayor opened the show at noon on July 6.

One criticism we offer. The small cards with class number and exhibitors' number should be scrapped and class cards provided. with the name and address of the exhibitor written on it, together with the class specification; this side should be placed downwards in front of or on the exhibit. On the reverse side the class and exhibitor's numbers only should appear, and here the judge would mark the award made. This method permits much more secretarial work to be done before the show, simplifies matters generally, and is less likely to lead to confusion and error in the awards than the other system. On the front of the card a space should be allowed for the adhesive prize slips which the steward could affix so soon as judging is finished, so that by the opening hour visitors are able to see who has won the prizes. Under the present system it was not possible to determine the prize-winners by lunch time, after which our representative had to return to town.

The Cheltenham Corporation Cup, offered for the best exhibit in the show, was won for the third time in succession by Messrs. Jas. Cypher and Son with one of their elegant arrangements of Codiaeums, Palms, Fuchsias, Thunias, Cattleyas, Humeas, Phyllanthus, Nandina domestica and Selaginellas, and so the Cup becomes the property of the famous Cheltenham firm.

The Cavendish Cup was won by Messrs. Sutton and Sons with a large exhibit of beautifully-grown Gloxinias, backed by Palms and interspersed with groups of bright, well-grown Clerodendron fallax.

The best collection of perennial and hardy flowers was the large and interesting one submitted by Mr. W. H. Walters, Colesborne Gardens, who was awarded the Fifty-guinea Drapers' Cup. This exhibit contained many new and rare plants, including Primula Florindae, P. microdonta, Cineraria lobata, with golden flowers, Cypripedium spectabile, the white, herbaceous Clematis Palassii, and the large-headed Allium albo-pilosum, besides Liliums, Salvias, Funkias and Sedums.

The Grocers' Cup was awarded to Messrs. J. Jefferies and Son, who had the best display of Roses. This was a very fine exhibit of pillars, baskets and bowls of Roses, the leading varieties being Mrs. H. Bowles, Mabel Morse, Independ ence Day, Mr. C. W. Edwards, H. V. Haworth. Los Angeles, Mrs. Dunlop West, Souv. de H. A. Verschuren, Emma Wright and Mr. Alistair Clarke's Australian varieties Ruby Ring, Queen of Hearts and Gwen Nash, the last a large, semi-double variety of bright pink colour with white centre. Mr. Jefferies also won the first prize for a display of Roses with the same exhibit, and Messrs. English and Son were placed second.

The Master Builders' Cup, offered for the best display of Sweet Peas, was won by Mr. Charles Wall, Bath, with a fine, clean lot of flowers admirably staged.

The Sunningend Cup, offered for the best exhibit of Carnations arranged on a space twenty-five feet by five feet, was won by Mr. C. Engelmann for the second year in succession, with a beautiful group of fine blooms of popular sorts.

In four classes the Corporation of Cheltenham offered first prizes of £10 each, and the Society added second and third prizes of £5 and £3 respectively. In the class for a display of Roses, Messrs. J. Jefferies and Son were placed first, and Messrs. English second. The Chalk Hill Nurseries led for a collection of hardy perennials with a well arranged exhibit of seasonable border flowers; Messrs. Bowles and Skarratt second.

Mr. C. Engelmann was the winner of the award for a group of Carnations, and Messrs. Bowles and Skarratt had the best rock and water garden, which was a very pleasing arrangement, the stones being well-placed, the planting carried out with care, and the background a suitable one; Messrs. Maxwell and Beale, second.

The Gardeners' Chronicle Medal for the best amateurs' exhibit in the show was won by Mrs. Butler (gr. Mr. G. J. Collins), Twyning Park, Tewkesbury, with a pretty, artistic display of plants, effectively arranged on a square space at the end of the Rose tent. Mr. Collins' design had a central arch furnished with Grevilleas, Ferns, Selaginellas and Fuchsias of the triphylla type, with a tall central Palm. Below and around this feature were handsome Codiaeums, Phyllanthus, Humeas, variegated Abutilons, good Clerodendron fallax, Lilium tigrinum, Odontoglossums, Cypripediums and Cattleyas. The addition of a few small Ferns to hide one or two obtrusive pots would have given a better finish to a good display.

There was keen competition in the table decoration classes, and we were led to notice that there was more amateurs' exhibits of plants and hardy flowers than on the previous occasion, while the children are well catered for and showed about one hundred baskets and vases of wild flowers.

Trade displays were excellent.

Medal Awards.

Large Gold.—To Messrs. Sutton and Sons; Messrs. J. Cypher and Sons; and Mr. C. Engelmann.

Gold.—To Messrs. Horwood, Messrs. Bakers, Mr. W. H. Walters, Messrs. W. H. Simpson and Sons, Mr. W. Wells and Messrs. J. Jefferies and Son.

Silver-Gilt.—To Long Ashton Experiment Station, for demonstration of Strawberry diseases; Mr. W. Yandell, Messrs. Fuller and Maylam, Mrs. Butler (gr. Mr. Collins), and Messrs. Bowles and Skarratt.

Silver.—To Mr. C. H. Herbert, Mr. J. H. White, Mr. R. J. Case, Mr. Payne, Messrs. Box Bros., Chalk Hill Nurseries, Messrs. Gurden and Son, Messrs. J. Scott and Co., Messrs. Wheelers, Mr. W. Covill, Mr. F. Rich and Mr. A. Banfield.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the monthly meeting of this Society, held in the R.H.S. Hall, on Monday, July 4, Mr. Charles H. Curtis presided. Six new members were elected. Two members withdrew £17 16s. 0d. from their Deposit Accounts and two lapsed members withdrew the sum of £5 3s. 1d. The sick pay for the month on the Ordinary side amounted to £68 4s. 8d., and on the State side to £62 19s. 4d.; Maternity claims totalled £15.

The sum of £39 1s. 10d. was made in grants to State-insured members for dental and surgical benefits, and ten new cases were considered.

Obituary.

THE LATE SIR J. T. DILLWYN-LLEWELYN.

Sir John T. Dillwyn-Llewelyn, Bt., V.M.H.—The death of this venerable gentleman, who may be regarded as the doyen of British horticulture, occurred on Wednesday, the 6th inst., at his home, Penllergaer, Swansea, in his ninety-second year. No man served British horticulture more worthily than Sir John, and no one was more beloved by his fellow men. During recent years, owing to his advanced age, he has not been able to give such close attention to horticulture as in the past, but he still maintained a lively interest in his garden, and the activities of the societies with which he was connected. So long ago as 1891, he was elected a member of the Council of the Royal Horticultural Society, of which he was a keen supporter, and a member of the Scientific Committee. He was for many years President of the Horticultural Club and he associated himself with most of the special societies connected with gardening. He was President of the now defunct National Potato Society, a Vice-President of the National Chrysanthemum Society, and the National Carnation and Picotee Society, also a patron of the National Dahlia Society. He was elected a Victorian Medallist of Honour in Horticulture in 1907. The deceased nobleman was born in 1823, and was sent to Eton in 1846. He left Eton in 1850 and went to Christ Church, Oxford, where he took honours in natural science. In 1890 he was created a baronet. He was prominent in civic, social and political work and a keen lover of sport. In 1891, he was Mayor of Swansea, and in 1895 was elected Conservative member for Swansea Town. Sir John was for some years captain of the South Wales cricket eleven, and president of the Welsh Rugby Football Union. He leaves a son, Lt.-Col. Charles Leyshon Dillwyn-Venables-Llewelyn, who succeeds to the baronetcy.

ANSWERS TO CORRESPONDENTS.

Branched Tulips.—*G. B.* Although Tulips with branched stems are not commonly seen in gardens, they are by no means rare; indeed, there is a strain in which the production of several flowers on one stem is quite a usual occurrence. Branched Tulips were illustrated and described in *Gard. Chron.*, May 15, 1909, page 317.

Culinary Peas Failing.—*A. B.* The young Pea plants are attacked by the fungus Thielavia basicola, which is the cause of the dark colour and rotting of the roots.

Gardener's Reference.—*F. O.* A servant is not entitled in law to demand a reference however long his service may have been, but this is seldom refused, unless there has been misconduct, and no doubt your employer will give you a reference if you ask him.

Mussel Scale on Palm Leaves.—*R. C. F.* The Palm leaf sent is affected with Mussel Scale. When only moderate numbers of scales are present thay may be removed by scraping and scrubbing the affected parts with some strong specific, such as caustic alkali. When using this strong chemical, the hands should be protected with a pair of gloves. If the plant is very badly affected we advise you to destroy it on the garden fire.

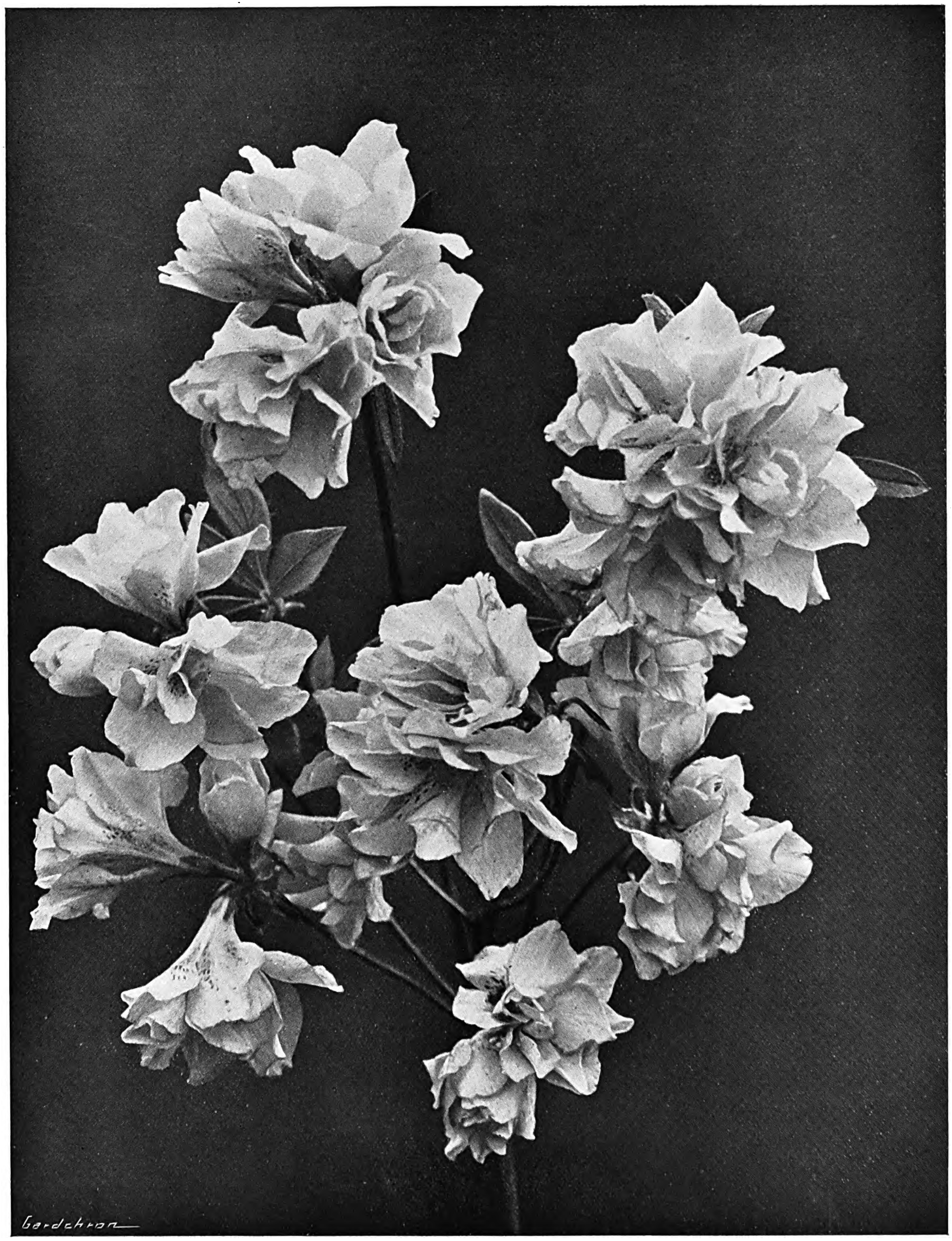
Names of Plants.—*P. O. P.* 1, Euphorbia Lathyris; 2, Veronica Traversii; 3, Pernettya mucronata; 4, Epimedium pinnatum; 5, Asphodeline lutea; 6, Spiraea Filipendula; 7, Potentilla hirta; 8, Leycesteria formosa; 9, Saponaria officinalis; 10, Physostegia virginiana. *W. T. C.* Silybum Marianum. *F. V. N.* 1, Taxodium distichum; 2, Cotoneaster salicifolia; 3, Spiraea canescens; 4, Philadelphus Bouquet Blanc; 5, Chimonanthus virginicus; 6, Buddleia variabilis; 7, Philadelphus Lemoinei erectus; 8, Viburnum rhytidophyllum. *E. J. M.* Scrappy specimens and badly packed; 1, Mackaya Bella; 2, Rhododendron species; probably R. Keysii; 3, Iris, species not recognised; 4, Muehlenbeckia complexa; 5, not recognised. *Interested.* 1, Matricaria inodora flore pleno; 2, Pentstemon Scouleri; 3, Cycas revoluta. *E. R. A. Y.* 1 and 3, Hemerocallis fulva; 2, Teucrium fruticans; 4, Senecio Greyi; Lilium umbellatum; 6, Phlomis fruticosa; 7, Streptosolen Jamesonii; 8, not recognised; 9, Veronica Chamaedrys; 10, Dianthus species.—*H. S.* English Iris, Grand Lilas. *K. V. E.* 1, specimen too scrappy; 2, Picea pungens; 3, cannot name Ferns without spores; 4, Chrysanthemum Parthenium flore pleno; 5, Lysimachia punctata; 6, Cryptomeria elegans; 7 and 8, Nephrodium Filix-Mas; 9, Chlorophytum elatum variegatum; 10, Pteris tremula. *R. F. F.* Salvia Grahamii.

Nectarines Unsatisfactory.—*C. H. H.* The external marks on the fruits are due to rubbing, which has injured the delicate skin. The splitting is usually due to heavy watering following a dry period, which causes the fruits to take up suddenly more water than they can hold. They do not appear to be affected by any disease or pest.

Peaches and Nectarines Failing.—*R. W. G.* The cracking of the Nectarine is not due to any parasite, but is undoubtedly due to some cultural error, such as excessive watering followed by a period of drought. The Peach is affected by scab disease, caused by the fungus Cladosporium carpophilum. Spray the trees with lime-sulphur at summer strength.

Communications Received.—A. T. J.—F. J.—G. B., Anglesea—D. L.—C. G.—R. S.—H. M—H. E. K.—A. K. T.—W. F.—A. D.—J. C. S.—H. C.—A. O.—A. G.—G. D.—H. I.—A. G. F.—F. J. B.—R. N. S.—F. J.—S. T. B.—R. U. B.—G. R.—T. E. W.—A. M.—A. J. S.—G. D.—F. C. L.—E. S.—T. P. S.—B. C.—O. G. A.

Supplement to the GARDENERS' CHRONICLE. July 23 '27



RHODODENDRON YEDOENSE.

THE Gardeners' Chronicle

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Rhododendron yedoense.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63·3°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 20, 10 a.m. Bar. 30·3. Temp. 63°. Weather, Showery.

The Treatment of Golf Greens.

REFERENCE has already been made in these pages (March 19, p. 187, Vol. LXXXI) to the now well-known fact that green-keepers in the United States have managed to produce perfect putting greens on their golf courses in spite of the fact that a continental climate is less favourable to the growth of grasses than is an insular climate, such as our own. The progress made in this direction in America is, indeed, so great that unless we take care the pre-eminence of this country for its lawns may go the way of our one time pre-eminence in the games played on them. The method which has led to the remarkable excellence of the golf greens in the United States is based on the recognition—we might almost say discovery—that the fine grasses suitable for golf greens thrive best in an acid soil; that is, under conditions which are repugnant to most cultivated plants. This discovery has been applied to the perfecting of golf greens and courses by taking advantage of the well-known fact that certain artificial fertilisers, such, for example, as sulphate of ammonia and ammonium phosphate, augment soil acidity. To bring this about liberal and repeated applications of one of these fertilisers are applied to the greens, the fertiliser being spread evenly and washed into the soil. Having regard to the results already obtained in the United States and in Canada, it seemed desirable that experiments should be made in this country in order to ascertain whether the method would prove successful here. Mr. Norman Hackett had already applied the method on the Keighley Golf Course with marked success (see *Golfing*, September 6, 1926), but a need still remained for further tests. Mr. Lane Jackson, Hon. Secretary of the Stoke Poges Golf Links at Stoke Park, Slough, who has an unrivalled knowledge of golf and of green keeping, was good enough to put certain greens, fairways and lawns at the disposal of Nitram, Ltd. for the purpose of experiment. The experimental areas were selected in April of this year and have been treated with successive dressings of sulphate of ammonia, similar neighbouring plots being left untreated in order that they might serve as controls. The dressings of sulphate of ammonia mixed with twice their volume of sand, were put on at fortnightly intervals at the rate of 5 lbs. per 1,000 square feet. Of the control plots, one received an equivalent amount of sand only, and the other nothing at all. Beside the plots on the golf greens and fairways there were others on the croquet lawn and on the lawn leading from the Club House to the first tee. Our illustration (Fig. 24) shows the striking effect of the successive dressings of sulphate of ammonia on the last-named lawn. Daisies have been so checked on the treated plot that not one flower is to be seen. By June, the observer in charge of the experiment reported that the strip was by that time free from Daisies and all other weeds. The result here is the more valuable in as much as it shows that the method of supplying uniform successive dressings is much better than the weed-killing method of making heavy applications of sulphate of ammonia irregularly over Daisy patches. That was done on either side of the strip and was effective in killing out the Daisies, but resulted in patchiness which the illustration shows in striking manner. Careful records of the weed flora and state of soil with respect to acidity are being kept, and will be published in due course. Already, however, the "painless extraction" of weeds by the sulphate of ammonia treatment is in evidence. Counts over measured areas of the plots under experiment show that in two months the treated patches lost fifty per cent. of their weed flora, whereas on sanded or quite untreated control plots the weed population had in every case increased. Accurate soil-acidity determinations are also being made, and there is evidence that the repeated dressings of sulphate of ammonia have already increased the soil acidity. This interim report of the results of the Stoke Poges experiment would appear to show that where water is available our greens and lawns may be improved rapidly by successive dressings of sulphate of ammonia or other "acid" manure. Applied at the rate already indicated, there is no risk of damage unless watering is neglected. Even where water is not available, the method may be employed provided that the dressings are applied at the advent of showery weather. We hope that not only green-keepers, but also those in charge of the green swards in London parks and in College courts and quadrangles will take note of these simple means of improving their lawns. The lawns of certain colleges in our old Universities, once our pride and the cynosure of every American eye, are now, alas, in many cases, fallen into the sere and yellow. It is time that they, too, were renovated, and if final results of the Stoke Poges experiments confirm the conclusion reached in this interim report, there is a ready and simple means of doing it.

Horticultural College, Swanley.—Speech Day of the Horticultural College, Swanley, Kent, is fixed for Thursday, July 28. At 3.30 p.m. the Rt. Hon. Lord Cornwallis, C.B.E., chairman of the Kent County Council, will present the diplomas and certificates to the successful students.

A New Public Park for Bathgate.—On June 25 the Rt. Hon. Sir John Gilmour, Secretary of State for Scotland, opened a new public park at Bathgate, on the Kirkton estate. Lodge Park, as the field is locally known, has an area of eighteen acres and was included in the purchase of Kirkton estate by the Town Council in 1914. The whole of the work of laying out the park and making of the bowling greens and tennis courts was done by direct labour and so far has entailed an expenditure of £3,300. The park superintendent, Mr. James Brown, has been responsible for the construction of the various ornamental plots, flower beds and shrubberies, and no fewer than 3,000 shrubs have been planted already.

Appointment.—Dr. R. W. Thatcher, for the past six years Director of the State Agricultural Experiment Station at Geneva, N.Y., has resigned as head of that institution to accept the presidency of the Massachusetts Agricultural College at Amherst, Mass. Dr. Thatcher's resignation will become effective on September 1. The Massachusetts Agricultural College is the second oldest agricultural college in the United States, the Michigan Agricultural College being the first institution of its sort in that country. The Massachusetts college enjoys a high prestige, and has among its alumni many men prominent in agricultural affairs.

Crops in France.—A report received by the Empire Marketing Board states that continued drought has seriously affected fruit crops in the Department of Var, and that yields are much below normal. The gathering of Plums and Greengages has begun, but the yield is only moderate, and the quality is below that of last year. It is an excellent season for Tomatos, quantity and quality being much above the normal. French Beans are giving good crops, and very little disease is reported.

Scottish Sweet Pea Trials.—The Sweet Pea Trials conducted by the Scottish National Sweet Pea, Rose and Carnation Society at Helmsburgh, were open for inspection to members on Saturday, July 9. There were eighty-nine varieties not yet in commerce, and raisers from England, Scotland, Ireland, the United States and Canada were represented. The seeds were sown in the middle of October—about two weeks too late for Scotland; the seedlings were planted out on March 31, and grown on the single-stem principle. Considering the backward season, the growth and display of bloom was remarkably good, but the quality of the flowers suffered in comparison with that of previous seasons. Four-flowered spikes were the exception rather than the rule, while unfixed varieties were exceptionally numerous, single sports being found in some stocks and so many as three and four in others. The white class was particularly disappointing as not one of the seven examples on trial could lay claim to purity of colour. Lavender and purple varieties were inferior in size and colour to the 1926 entries, and the best are unlikely to supersede the starred sorts in the official classification lists. Pink shades predominated; of the twenty-five varieties in that section, fourteen came under the category of cream-pink, and of the total possibly three or four may ultimately be included in the list of honours. The cerise class contains several promising varieties. Mrs. A. Searles was not seen at its best, and of the remaining ten varieties Mr. J. Stevenson's deeper shaded Coralline and No. 8 were outstanding. The latter was quite true, and it was one of the few varieties which was credited with four well placed blooms on a long, stout stem. The only orange Sweet Pea in the trials was not up to exhibition standard, but a large, wavy, orange-scarlet sort with double standards should be well placed in the judges' pointing. Blue shades were well represented, but the majority will require to show improvement to be included in the chosen selection. Boy Blue had a rogue, and No. 23 was a mixture of four distinct colours. The best of the class was a large dark blue of strong growth, and No. 86 is among the probables. Sunkist, a cream-ground Youth, does not seem to withstand bad weather, but two good sorts were included among the Fancies. Perhaps the most distinct Pea in the trials was No. 41, classed as a lilac. It is difficult to describe, as it is not a self and the blooms, though of medium size, are nicely formed. Petunia contained three sports, and Strawberry did not justify its name. Of the two crimsons one possessed merit both as regards colour and form. The trials will be visited on two other occasions prior to the date of the show and before the awards are made.

Ayrshire Potato Crop.—Merchants who purchased growing crops of Epicure Potatos at the recent auction sales are reported to be making good profits from the transactions. Prices are averaging about £11 per ton and the demand is such that over 1,000 Irish harvesters are employed in the work of digging in the area between Ayr and Ballantrae, and for the first occasion for many years they have been working overtime. Up to the end of June, the crop averaged about six tons to the acre, but with warmer weather, accompanied by moist conditions, the tubers have developed to the extent of yielding nine and ten tons to the acre. Farmers who sold their crops are bemoaning their ill-luck, as it would have paid them handsomely had they retained their Potatos and marketed them by weight instead of disposing of them by the acre.

National Diploma in Horticulture.—The Royal Horticultural Society's National Diploma in Horticulture has been awarded to the following as a result of the written and practical examinations for the Diploma held this season. Section 1, General Horticulture :—Mr. Harry E. Brooks, Chewton Priory Gardens, Chewton Mendip, Bath; Miss K. A. Clarke, 1, Claremont Terrace, Hextable, Kent; Mr. William H. Frentiman, Drill Hall Lane, Cranbrook, Kent; Miss D. M. Garstang, Studley College, Warwickshire; Miss E. G. Horrell, The Grange, Thorney, Peterborough; Mr. Robert H. Jeffers, 23, Bell Place, Edinburgh; Mr. Raymond W. B. Keene, Ramil, Hatfield Road, St. Albans; Mr. William McCarrell, The Gardens, Deanston House, Doune, Perthshire; Miss Annie Newton, Martindale, Tubbenden Lane, Farnborough, Kent; Mr. Edgar R. Saltmarsh, Somerset Farm Institute, Cannington, Bridgwater, and Mr. George L. Sowter, The Gardens, Heacham Hall, Heacham, King's Lynn. The following have passed the Preliminary Examination, and will be eligible to take the Final Examination when they have completed the necessary six years of practical experience in gardening :—Mr. Allan V. Batley, 83, Balfour Road, Normanton, Derby; Mr. T. Dickson Boyd, 6, Clarence Road, Kew; Mr. J. William Breed, A.V.T.C., Catterick Camp, Yorks.; Mr. William A. Crighton, Inverbay, Invergowrie, by Dundee; Mr. A. A. Culham, 79, Gladstone Road, Wimbledon, S.W.; Miss J. E. C. Emvey, 15, Belvoir Road, St. Andrews Park, Bristol; Mr. Thomas H. Everett, Greystone Yonkers, New York, U.S.A.; Mr. William G. Fry, 14, Gainsboro' Road, Richmond, Surrey; Miss H. M. Greene, Huntworth, Stoke Bishop, Bristol; Mr. Albert E. Johnston, 9, Whaley Terrace, Enniskillen, Co. Fermanagh; Mr. Hugh R. McGlashan, 1, Bell Place, Edinburgh; and Miss Ida M. Rowley, 12, Bestwood Park, Clay Cross, near Chesterfield.

Mr. Frederick Copley.—The subject of this note is the Superintendent of the Mirfield Parks and Recreation Grounds. The town of Mirfield used to be one of the most rural centres in the "heavy woollen" district of Yorkshire, but buildings are being erected so rapidly that the rural characteristic will soon have passed away. Ings Grove Park is the principal open space in the town, and one of its most delightful features is a War Memorial Scheme. This takes the form of a large Runic Cross which is surrounded by a rockery in a Rose garden. Mr. Copley is keenly interested in alpine plants, and he maintains an up-to-date collection of these and also Roses, which are very successful on the somewhat heavy soil. The herbaceous garden, which is divided into several large areas, is much appreciated by the public of Mirfield. A comprehensive collection of species is grown, but Mr. Copley is specially interested in Tritomas and Michaelmas Daisies. When these are in bloom they constitute a fine display. Thousands of Crocuses, Tulips and Daffodils make a bright display in spring, and these are succeeded by an equally bright summer-bedding arrangement. The Mirfield Memorial Park of fourteen acres is devoted exclusively to games, and is a very popular open space. Mr. Copley was appointed Superintendent of Parks and Recreation Grounds in 1919. For many years prior to that date he was head gardener to the late Edwin Theodore Ingham, Esq., of Blake Hall, Mirfield, one of the few estates on which there were Pine stoves until a very recent date. Mr. Copley has seen this fine old place pass into the hands of the builder. His prentice days were passed in the gardens of W. F. Lee, Esq., Grove Hall, Knottingley; C. H. Simpson, Esq., Moor Top House, Ackworth; and Samuel Hirst, Esq., of Kellington.

MR. F. COPLEY.

National Playing Fields.—Although there has been a generous response to the Duke of York's appeal for National Playing Fields, many gifts of money and land are needed ere the £1,000,000 aimed at is reached. Many schools and clubs have contributed sums that, although comparatively small individually, are considerable in the aggregate, but, so far, only the fringe of this source of revenue has been touched. Local branches of the National Playing Fields Association are springing up in all directions, but here again there is room for a wider response to the appeal; where local interest has not yet been stirred, there is an opportunity for some enthusiastic sportsman to work up enthusiasm and secure donations. Many large business firms have made liberal donations and county associations are busy gathering in both small and large gifts. A recent gift is one of ten acres of land made by Mr. F. Ransom, of Hitchin. Full particulars of the appeal, and the need, together with literature on the subject, may be obtained from Mr. Noel Curtis-Bennett, N.P.F.A., 166, Piccadilly, W., to whom donations may be sent.

The Fruit Crops.—Will readers who have consented to furnish reports on the hardy fruit crops and have not yet returned their forms, kindly do so as soon as possible, as the statistics will be published in an early issue in August.

Cambridge University Press.—An arrangement has recently been made between The Cambridge University Press and Duke University Press of Durham, North Carolina, U.S.A., under which The Cambridge Press will act as Agent in this country for the sale of the publications of Duke University Press. A full announcement will be made, and a first list of books given, in the October number of *The Cambridge Bulletin*, which may be obtained free of charge from The Cambridge Press, Fetter Lane, E.C.4.

Foremarke Cup for Gladioli.—The annual competition for the Foremarke Challenge Cup offered for Gladioli will take place at the Royal Horticultural Society's fortnightly show at Vincent Square, Westminster, on August 16. The Cup is offered for the best twenty spikes of named Gladioli in not fewer than ten varieties. Not more than two spikes of any one variety may be shown. The competition is open to both amateur and trade growers. Entry forms may be had on application to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W.1, by whom the completed forms must be received not later than the first post on Wednesday, August 10, 1927.

Legacies to Gardeners.—The late Mrs. Charlotte Isabel Slater, of Summerfield, Lower Howsell, Malvern, who left £100,860, bequeathed £350 to her "faithful servant and gardener," Mr. William Williams.—Mr. Henry Abbott, Broad Green, Liverpool, whose estate was valued at £11,399, left £100 to his gardener, Mr. Walter Hope.

Fifth International Botanic Congress, 1930.—The fifth International Botanical Congress will be held in Cambridge about the middle of August, 1930. The Executive Committee considers that botanists attending the Congress should pay a membership fee, probably of £1, but in view of the considerable expense involved in the organisation of the Congress it is necessary to have a fund immediately available. The Committee believe that British botanists and others interested in the Congress will be prepared to subscribe to such a fund (additional to membership fees), and suggests that such subscriptions might take the form of an immediate donation also, if possible, a guarantee of a further sum if required. All contributions and promises should be sent to the Hon. Treasurer, Dr. A. B. Rendle, British Museum (Natural History), Cromwell Road, London, S.W.7.

Potatos from Spain.—The Spanish Government has authorised the export of a further 10,000 tons of early Potatos, bringing the total quantity authorised to 50,000 tons. The extra 10,000 tons now authorised are to come from the Valencia region.

Appointments for the Ensuing Week.—Tuesday, July 26: Dorset Horticultural Society's show (two days). Wednesday, July 27: South County Dublin Horticultural Society's show; Chesterfield Horticultural Society's show; Porthcawl Horticultural Society's show (two days); Haywards Heath Horticultural Society's show (two days). Thursday, July 28: Royal Lancashire Agricultural Society's show (four days); Paisley Florists' Society's meeting. Friday, July 29: Royal Welsh Agricultural Society's show (four days); Peel Park Flower Show and Gala (three days). Saturday, July 30: Harrogate and District Horticultural Association's show; St. Ervan and District Garden Show; Newburgh and District Flower show.

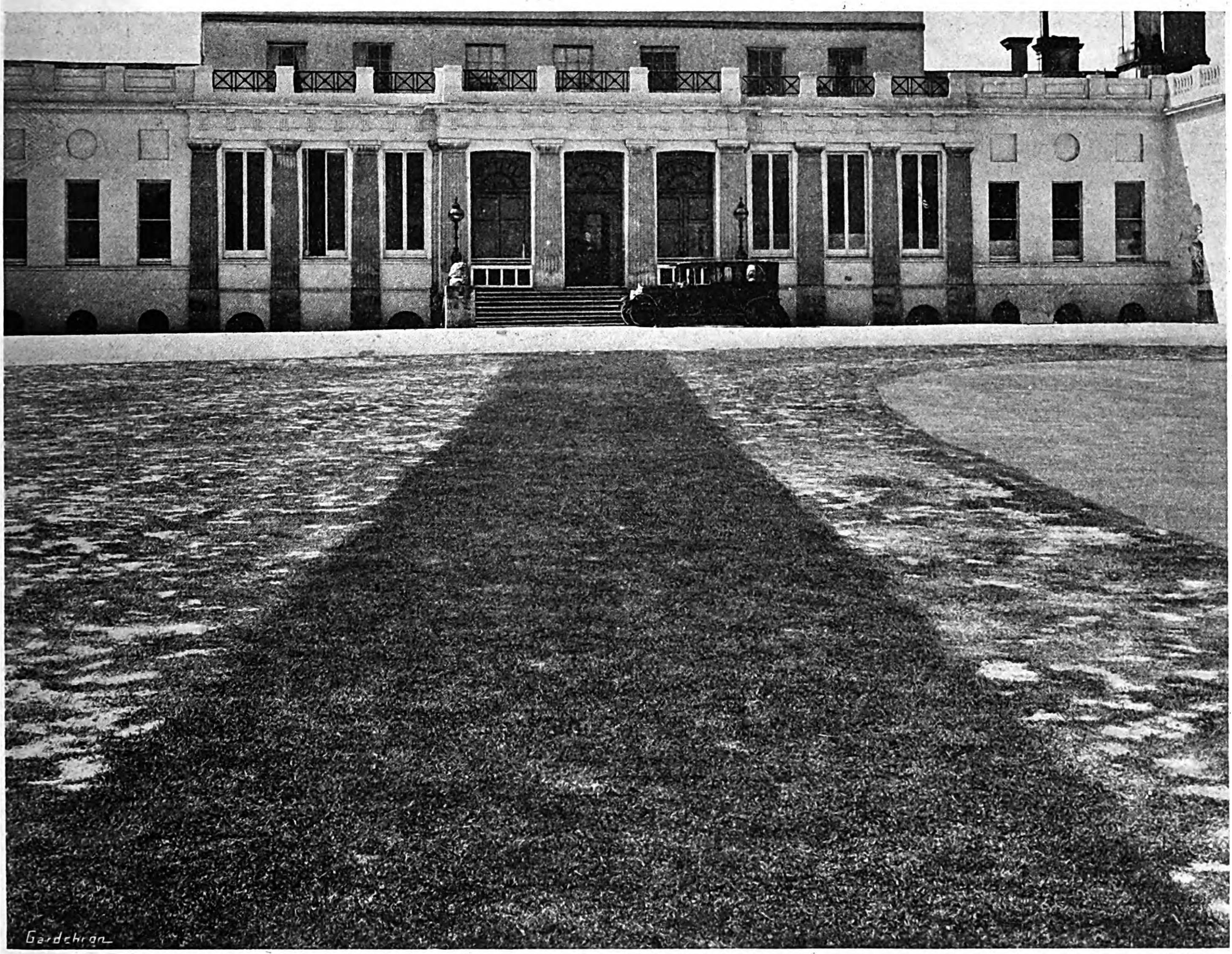

FIG. 24.—GOLF GREEN AT STOKE POGES.

Showing the value of dressings of sulphate of ammonia in eradicating weeds and improving the grass.

(see p. 61).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cultivation of the Strawberry.*—Mr. Beach, the now well-known Strawberry grower, of Worton, Isleworth, having astonished everyone last year, at Chiswick and in the Crystal Palace, with his extremely large fruit of first-rate flavour, granted me the favour of again seeing his grounds this year. By July 14 he had picked a great many, but for all that the crop surprised me, more especially the rows running parallel with the lowest part of the ridges. Walking amongst them was quite impossible without crushing ounces at every step, and I am not certain that Mr. Beach's Queens are not altogether different from those of others, as I myself have often found my beds sport. Upon this point, however Mr. Beach is silent; the colour was very fine all round with no white points. I remarked that Mr. B. is enlarging his pond at the top of his grounds; when finished, it will be about sixty to seventy yards long, twenty to thirty yards wide, and from six to eight feet deep where the beautiful clear soft springs, to the amount of twenty, are continually flowing into it, rising, no doubt, from the high grounds above, where the late Sir Joseph Banks lived. The portions of his grounds mentioned by me last year as being under Osiers, has been made into ridges, which are now occupied by a fine crop of Ash-leaved kidney Potatos, all ready to dig up; and the moment the Potatos are off, the ridges are to be planted with Strawberries, in rows two feet six inches apart, and one foot six inches asunder in the rows. These new ridges are not made so high in the middle by one foot as the old ones, which are three feet high, Mr. B. having found that the rows at the lowest part of the ridge had always produced not only the largest fruit, but by far the heaviest crop. An important mistake which I made last year is that of this ground the longest square runs south, consequently the ridges must run east. Mr. Beach's Queen Strawberries are all, even the smallest, put into 1, 2, 3 and 4 lb. punnets, for the gathering of which his women receive a halfpenny per punnet, and even at this rate they make 20s. a week, between Strawberries and other fruits, such as Raspberries, Gooseberries, Currants, etc. It may be worthy of mention, that his Pear and Apple trees are loaded with fruit, while we on the Surrey side have hardly any. One very important thing which I noticed was, that all his Strawberries, except the Queens, were mulched with straw. I asked the reason why the Queens formed an exception? He said that the early ones had shorter fruit stalks, and were ripe before the runners covered the ground; but that the Queens coming in late covered the ground with runners by the time the fruit was ripe. Another thing I observed was, the whole ridges of Strawberries were lying as it were dead ripe, what many growers would have had gathered days before—this again is a point greatly in favour of colour and flavour; we are generally too fast in picking all sorts of fruits and your remarks in regard to the fruits exhibited at Chiswick fully prove this. I hope that not only myself but all other growers, may benefit by Mr. Beach's experience, which has been acquired at no ordinary amount of expense, coupled with great industry and perseverance. *James Cuthill, Camberwell. Gard. Chron., July 24, 1852.*

The Week's Work

THE ORCHID HOUSES.

By J. T. BARKER, Orchid Grower to LADY LEON,
Bletchley Park, Bletchley, Bucks.

Miltonia vexillaria.—This Orchid, together with its varieties and numerous hybrids, has few equals among flowering plants for making a brilliant display over a long period. Under proper conditions they are mostly vigorous and easy to grow, if a few simple rules are observed. Miltonias, as cut blooms, have a short life, but the flowers last for a considerable time on the plants, even in a dwelling-house, and the latter may be used for indoor decoration provided they are not allowed to remain too long or become dry whilst there. Strong plants start into growth before the flowering period is over, and by the time the flowers have faded, the plants will be ready for re-potting. The roots should never be allowed to suffer from lack of water, even when at rest. Plants which produced their flowers early in the season and were rested slightly have made considerable progress and may have attention at once, whilst those that are later may be repotted at a subsequent period.

Potting.—Miltonias are best repotted annually, for, if the compost is at all sour and decayed, there will be a general decline in the vigour and vitality of the plants. Vigorous specimens that require more root-room should be placed in larger pans with as little root disturbance as possible, taking care that they are not over-potted. Exhausted plants, or those that have become ragged or weak in the centres, are best divided and the portions placed in small receptacles. It is advisable to take every opportunity of increasing the stock of choice and rare varieties, therefore the back pseudo-bulbs removed during the process of re-potting should be placed on damp moss, or even in small pots, when they will make new growths and soon become healthy specimens.

Compost.—A suitable potting material consists of equal parts of Osmunda fibre, A.1. fibre, and Sphagnum-moss, with half-decayed, broken leaves added. The receptacles should be well-drained, and as the plants are surface rooters too much depth of material should not be given them. M. vexillaria, and the greater number of its hybrids, thrive best in an equable temperature throughout the year, hence it is a good practice to grow them in an Odontoglossum house temperature during the summer, and in a house with a warm intermediate temperature during the winter. Thrips must be kept in check at all times.

THE KITCHEN GARDEN.

By R. H. CROCKFORD, Gardener to THE RT. HON. LORD WAVERTREE, Horsley Hall, Gresford, N. Wales.

Dwarf and Runner Beans.—These crops have made very slow growth and, on the whole, look very sickly. The Dutch hoe should be used freely to stir the soil between the rows and thus allow the air and warmth to penetrate more easily. Keep a sharp watch for slugs, as these pests are especially destructive during wet weather.

Peas.—A dressing of superphosphate sprinkled alongside the rows and well stirred in the soil with the Dutch hoe, will prove very valuable in assisting the crop of Peas generally, especially if it is applied during showery weather just before the plants come into flower.

Early Potatos.—The tubers should be lifted so soon as they are sufficiently matured. Do not wait for the foliage to die down. A good test to prove whether the crop is ready is to lift a few roots from various parts of the bed, and if the tubers leave the stems easily when gently shaken, and the skins are sufficiently set, there need be no fear but that the Potatos will remain firm and keep well. If tubers are being saved for seed purposes, care should be taken to select those of the most suitable size and quality. After the crop is cleared and the ground forked over and levelled it may be used for growing salads, Turnips and other crops that need to be sown or planted now.

Winter Onions.—So soon as the bulbs are fully matured, the stems should be carefully bent over to assist the ripening process, and so soon as this is effected the crop should be lifted. The Onions should be perfectly dried before storing them. These bulbs, if carefully handled, will keep much longer than is generally believed.

Leeks.—This useful vegetable should now be planted in quantity on rich ground. Make holes with a bar or dibber, to a depth of about ten inches or twelve inches, and leave the hole open. Simply place the plant in the hole, add just sufficient soil to cover its roots, and fill the hole with water. This method will produce good Leeks, on much less space than the usual way of growing them in trenches, as the space allowed need not be more than fourteen inches between the rows, and ten inches to twelve inches between the plants. As the stem grows and fills the hole it will become perfectly blanched, thus saving the labour of earthing up.

Hoeing.—Use the Dutch hoe on frequent occasions amongst all growing crops, not only to keep down weeds, but also to conserve the soil moisture during dry weather.

PLANTS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN,
Brocket Hall, Hertfordshire.

Freesias.—To obtain an early batch of these beautiful flowers, a few bulbs should be potted now. It is undesirable to pot the whole of the stock at this early date; where a very late batch is required it will be safe to leave the remaining bulbs until about the last week in August or the first week in September, thus prolonging the season of flowering so much as possible. Freesias delight in a fairly rich soil with thorough drainage. Pots varying from five inches to six inches in diameter will be suitable; if the smaller receptacles are used, place six to seven bulbs in each pot, while the larger will accommodate nine to ten bulbs. After potting the bulbs, stand the pots on a bed of ashes in a cold frame and give the soil one good watering. Afterwards cover the pots with finely-sifted leaf-mould to the depth of half-an-inch, or cover the frames with some material to exclude the light until growth commences, when it should be removed. For general purposes, Freesia refracta alba is still one of the best for early forcing. Do not attempt to force growth with fire-heat to obtain early flowers, rather let the plants develop steadily in a cool house near the roof-glass. Some of the newer varieties should be included, but these I would advise to be grown for later flowering.

Lachenalias.—These plants require much the same treatment as recommended for Freesias, but different pots, as they need a more shallow rooting-medium. Pots four-and-a-half inches in diameter will be large enough, while shallow pans will be found to suit them admirably.

Other Bulbs for Forcing.—To be successful with Roman Hyacinths, Paper White Narcissus and early Tulips, much will depend upon when the bulbs are obtained. Early ripened bulbs of these subjects may be procured by the end of the present month or early in August, and where the order has not been forwarded to the bulb merchant it should be sent at once. Iris tingitana is a very useful subject to grow, and may be had in flower at Christmas, if a cool greenhouse is available. To be successful with this plant it must not be subjected to heat, but grown in quite cool conditions.

Souvenir de la Malmaison Carnations.—If the work of layering these Carnations has not been completed, it should be finished at the earliest possible date with a view to obtaining good rooted plants in pots by early autumn. To obtain good plants it is necessary to take layers from young, healthy stock, and not from plants that have been grown in pots for two successive seasons. Where it is intended to grow a batch of one-year-old plants, the work should be proceeded with at an early date. They will then become well-established in the new compost by the autumn. Do not use rich soil; good open loam, mixed with plenty of old mortar rubble and coarse sand, is all that is required.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD,
Wrotham Park, Barnet, Middlesex.

Peaches and Nectarines.—Most of these trees are making plenty of young wood, and the fruits, of which there is a good crop, are swelling satisfactorily. Keep the foliage clean and free from red spider. Feed the roots liberally with liquid manure or some good artificial fertiliser to assist the trees before the fruits are too advanced. Examine the young growths at intervals and remove any that can be spared to give the others every opportunity to develop and mature by the end of the season, securing the latter neatly in position. The pruning or thinning of the young shoots may be done when they are being trained in position, retaining only sufficient for furnishing the space. The fruits of Alexander, Waterloo and other very early varieties are approaching ripeness and should be gathered a little under ripe, for if they are allowed to ripen perfectly on the trees they will be very liable to crack, especially in dull, wet weather, and the flesh will become dry.

Apples.—The majority of Apple trees are bearing very heavy crops of fruit, and although a goodly number of the smaller fruits may drop, where practicable the number should be reduced, according to the growth and strength of the trees and the size of the varieties. Thinning is especially necessary in the case of choice dessert varieties and large fruiting sorts. Reducing the crop also enable the trees to form strong fruit buds for next year's growth. All trees bearing heavily should be mulched and fed liberally at the roots to encourage strong growth and increase the size of the Apples.

Cordon Apples.—Simple and double cordons are often trained on single wires about fifteen inches high by the side of paths in the fruit and vegetable garden. By selecting good kinds grafted on the Paradise stock, and training them in this way, good crops of choice fruits may be obtained. Young trees should not be cropped too heavily; in thinning the fruits remove the smallest specimens and any that are badly placed. Those left to mature should be fully exposed to the sun to obtain high colour and good quality in them. Mulch and water the roots freely if the land is light and porous.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to COLONEL SPENDER CLAY, M.P.,
Ford Manor, Lingfield, Surrey.

Pears, Plums and Cherries.—The young shoots of maiden trees that were potted last autumn and plunged out-of-doors on a warm, open border should be kept closely pinched at the sixth leaf in the case of pyramids, and the leaders at every foot as they ascend. If laterals and sub-laterals develop these may be pinched and repinched to a single leaf, first to divert the sap to the buds nearest the main stem, and second to expose them to the ripening influence of sun-heat and air. The pots, eight inches or nine inches in diameter, being well filled with roots, mulch the latter with decayed manure, water them copiously, and syringe the foliage in the evening.

Early Vineries.—Early vines that have been cleared of their fruits should be syringed liberally late on fine evenings, using a little soft soap and sulphur occasionally where spider has been troublesome. Inside borders which have been allowed to become rather dry should be made moist again; if the soil is hard prick it over lightly with a fork to ensure even distribution of the water. Clear water is suitable for young and vigorous vines, but older vines will require more generous treatment as the great tendency in their case is premature ripening of the wood and foliage, therefore the syringe may be used fairly freely and the roots given diluted liquid manure. Ventilation should be afforded liberally both day and night.

Successional Vineries.—Houses containing ripe Grapes should be kept cool and airy and lightly shaded for a few hours on bright days if black Grapes are losing their colour. Airy conditions are best for Grapes in the autumn, but for the present the borders and floors should be damped liberally and the walls syringed frequently. A change to damp or wet weather will, as a matter of course, necessitate much drier treatment and the maintenance of a steady temperature, otherwise the berries of such varieties as Madresfield Court may crack; much, however, depends on the way the borders have been watered.

Muscats.—Muscat Grapes that are ripe or approaching that stage should be exposed to plenty of light by drawing the leaves a little aside, but not to such an extent that hot sun will reach and injure the shoulders. Keep the borders fairly moist and well covered with clean litter. Sun heat should now suffice, but in dull weather a little fire-heat will help to keep warm, fresh air in motion.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Crocus.—Autumn-flowering Crocuses should be planted so soon as possible. They are all suitable for planting in the rock garden, while some of them, such as C. speciosus, C. zonatus, C. nudiflorus and C. pulchellus are excellent for naturalising in grassy places. The choicer species and varieties of both autumn- and spring-flowering Crocuses should have the shelter of a cold frame, in which they can be planted in a well-drained bed, or be grown in pans and removed, when in flower, to a cool greenhouse. The large-flowered varieties of Crocus vernus, or the so-called Dutch Crocuses, are ideal for naturalising in grassy places, in the hardy fernery or for planting in beds of deciduous shrubs.

Budding Roses.—This work can usually be carried out over an extended period from June onwards, the period being largely determined by weather conditions, for in dry weather the bark of the stocks will not lift. In a small way this may be surmounted by watering the roots thoroughly and thus get the bark into a condition to run freely. A late and backward season may so affect the plants that buds cannot be obtained in suitable condition at the usual time; buds for the purpose may be obtained from shoots that have just finished flowering. In gardens where a quantity of plants are budded either for the upkeep of stock or for instructional purposes, the work should be performed as conditions permit, speed and clean workmanship being the essentials to success.

Cyclamen.—There are several species of hardy Cyclamen. The autumn-flowering species, of which C. europaeum and C. neapolitanum are the best, should be planted on a large scale in partially shaded places under trees, where they revel in a good natural deposit of decayed leaf-soil. The leaf-mould, combined with stony soil, seems to afford ideal conditions for them. They flower in wonderful profusion before their foliage is produced; the beautiful zoned and marbled leaves are also very beautiful in their season. Altogether Cyclamens are ideal subjects for naturalising. The autumn-flowering species should be planted so soon as possible. The spring-flowering species and varieties, as represented by C. Coum, C. Atkinsii, C. ibericum and C. repandum, should be planted so soon as the dry roots are received. They are all useful for planting in the rock garden, or for growing in pans in the alpine or unheated greenhouse. C. Coum is excellent for naturalising in quantity under the same conditions as C. neapolitanum and C. europaeum, and under suitable conditions it seeds and increases freely.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Summer Pruning.—The summer pruning and training of wall trees should now be commenced. Pears growing on south and west walls should be attended to first, shortening all foreright shoots to the fourth leaf from the base, and tying or nailing in the leading shoots. Where the crops are heavy, opportunity should be taken to thin the fruits to reasonable numbers. As trees growing on south and west walls are likely to suffer from lack of moisture, they should, if necessary, be well watered, and a mulch of manure or other moisture-retaining materials placed in position. Plum trees on walls should have as many of the current season's shoots tied in as room can be found for, always keeping in view the removal of older branches at the winter pruning, and only removing superfluous young shoots at this operation. Many old Plum trees have been ruined by spur-pruning, and a little thought and attention are required in the selection of the most suitably placed young shoots, so that the symmetry of the trees may be retained, while at the same time plenty of young, fruit-bearing wood is trained in to provide for future crops. Peach trees on south walls should have the same attention given them as when they are grown under glass, and no effort should be spared to keep them free from insect pests, as well as from the ruinous and disfiguring effects of Peach-leaf blister, by spraying and syringing them with well-known specifics.

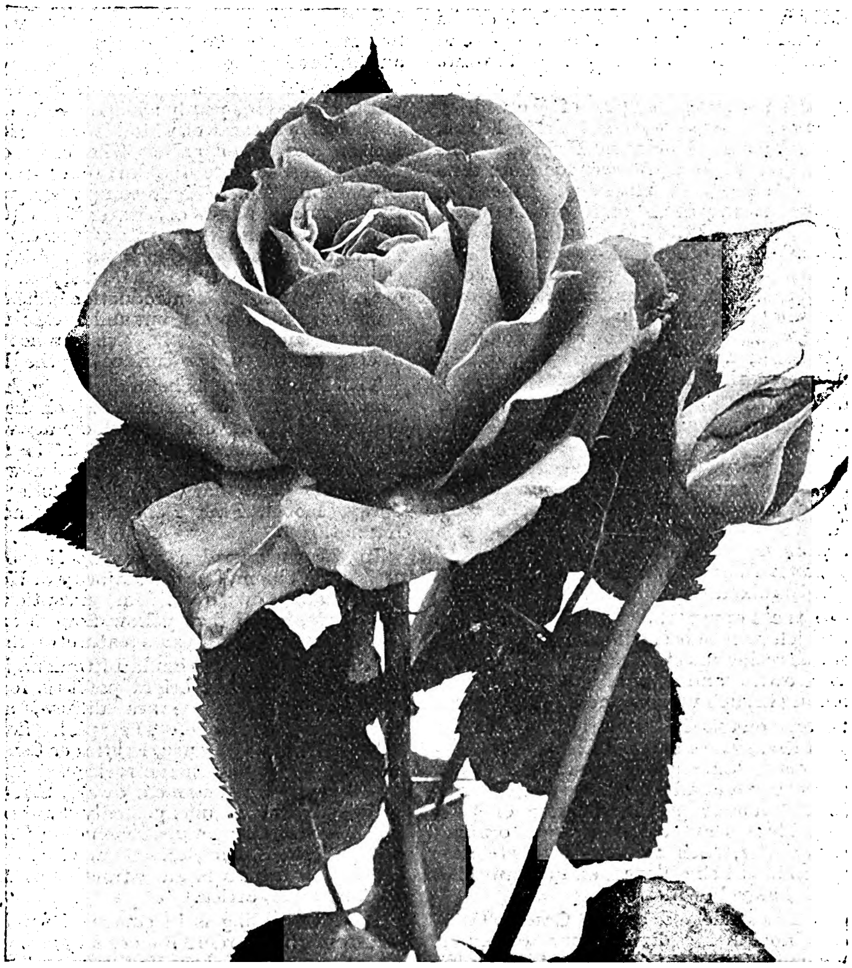

FIG. 25.—ROSE DAILY MAIL.

Awarded the Gold Medal of the National Rose Society and the *Daily Mail* Gold Cup, as the best new scented Rose, July 15; colour crimson. Shown by Messrs. W. E. B. Archer and Daughter, Sellindge, Ashford, Kent.

Hedges and Topiary Work.—The clipping of trees and hedges is easily done now before the young wood has become firm, and although a few shoots or secondary growths may appear later, these may be easily removed at another time. Escallonia macrantha makes a perfect hedge-plant for western seaside districts, where it thrives and seems to revel in the salt-laden breezes. This shrub is best kept in shape by two prunings or clippings annually, when it forms a splendid shelter for less hardy or rather less salt-loving plants. In the milder districts golden Privet makes a very fine hedge, if planted in full sunshine and not overshadowed by stronger-growing subjects; occasionally a few of the shoots may revert to the green form, and these should be traced to their point of origin and severed. The common Fuchsia can hardly be surpassed as a flowering hedge plant for gardens in the west, but as it flowers from now onwards through the season, this is not the proper time to trim it, the operation being best performed in the early spring just before new growth has commenced. A Fuchsia hedge in autumn, with its myriads of scarlet and purple flowers, is a most beautiful sight.

NOTES FROM WISLEY.

The chief object of interest at Wisley at present is the trial of Annual Poppies. Their growth has exceeded expectations, and their bright blooms make a fine display of colour. Among the most showy are the double-flowered varieties belonging to the somniferum group in which may be seen almost every shade of red and pink. Many excellent, double, white-flowered varieties are also in bloom, one of the best of which is White Swan. Contrast is provided by the very dark blooms of varieties such as Dark Heliotrope, Violet and Nubian Prince. A pretty, semi-double Opium Poppy is seen in Munstead Cream Pink while Bright Lilac is an attractive variety of the Paeony-flowered strain.

One of the best of the single-flowered Opium Poppies is The Bride, a tall-growing variety with large, white flowers. Miss Sherwood, with single, white flowers, edged with pale pink, is also very handsome, while those of the Admiral stand out by reason of the broad band of red which forms a margin to its white petals.

Among the many fine strains of the Shirley Poppy may be mentioned Shirley Mixed, Wisley Stock and Ryburgh Hybrids. The latter have already been in flower for more than six weeks and are still blooming. Stocks of Shirley Poppies in which pink predominates include those named Wild Rose and Deep Pink, while Little Gem, another pink-flowered Shirley variety is remarkable for the particularly compact habit of the plants. Other distinctive strains of the Shirley Poppy include Raynes Park Hybrids, of which the predominating colour is greyish-lavender, and American Legion, which has handsome scarlet blooms with white centres.

In addition to Shirley and Opium Poppies, Iceland Poppies, such as the Improved Sunbeam and the pink-tinged Coonara, are also in bloom, and although sown at the same time, they commenced to flower considerably earlier than any of the annual varieties. The only failure in this trial has been the Poppy species sent in from Botanic Gardens, for not only has germination been poor, but in many cases an extremely mixed crop has resulted.

Next to the Poppy trial is a trial of Sweet Sultans which will shortly be in flower. The plants of this rather uncertain subject have made excellent growth, and should look extremely well blooming in such variety and large numbers.

Other plants on trial in this part of the gardens include Zinnias, herbaceous Phloxes and Kniphofias (Tritomas). The last, however, were only planted last autumn and will not be at their best for at least another year. In spite of this, some good blooms are to be seen on orange-flowered varieties, such as Vera D. Pritchard, Glowing Torch and Excellence, and on Russell's Gold, which has yellow flowers.

Bearded Irises selected by the Garden Committee are now being divided and replanted under a new system whereby separate beds for each colour are provided, and room is being left for any additional varieties which may be sent in at a later date.

Some of the Delphiniums have now passed their best, but there is still a good show of bloom in this trial. Varieties which have done well include the brilliant blue Constance, Violet Queen, Corry, Orion and F. W. Smith; the last-named has grown very tall.

A feature of the herbaceous borders this year is the large number of Salvia species, most of which are now in bloom. One of the most striking is Salvia argentea, which has very large leaves thickly covered with silvery down. This feature is also found on the leaves of S. globosa, so called on account of the globular arrangement of the inflorescence. Salvia turkestanica and S. virgata nemorosa are most useful in the herbaceous border, not only for their flowers, but also by reason of their brightly-coloured bracts, which persist long after the flowers are over. Other good Salvias in flower are S. transylvanica, with purplish-blue flowers, and S. nutans, with blooms suggestive of spikes of Lavender. Blue and mauve plants seem to predominate in the borders at the present time, for in addition to Salvias, flowers of similar colouring are seen in Erigeron speciosum, Erigeron Elsie, and in Campanulas such as C. bononiensis, C. grandis, C. lactiflora and C. latifolia, of which Brantwood is a good variety. Two blue-flowered members of the Borage family in bloom are Mertensia sibirica, with pale blue flowers and glabrous foliage and Symphytum peregrinum, which is too coarse-growing for any but a large border, while a blue-flowered Composite is Catananche coerulea with papery bracts. A variety of the latter-named bicolor, with white flowers having a violet centre, is also in bloom. Thistle-like plants include Acanthus spinosus, which is flowering in company with Morina longifolia. The latter has whorls of tubular blossoms which are first white and later turn pink and red.

Other noteworthy plants in flower in the herbaceous borders are Heliopsis scabra, a compact-growing Composite with yellow flowers, and Sidalcea Listeri, with pale pink flowers. Among the many plants which are worth growing for their foliage alone may be mentioned Selinum tenuifolium, Thalictrum dipterocarpum and Artemisia borealis, with grey leaves.

The ponds are now gay with Water Lilies, but their effect is partly spoiled by the condition of the foliage, most of which is badly riddled by insects and other pests. The chief offenders in this respect are the larvae of the Brown China Mark Moth (Hydrocampa nymphaeata), the larvae and adults of a water beetle (Galeruca nymphaeae), and the grubs of the Caddis Fly. Damage has also been done by an aphis (Rhopalosiphum nympheae) which attacks in addition other aquatics. The introduction of fish helps to keep down these pests, but unless the foliage is forcibly submerged, the fish cannot get at insects on the upper surface of the leaves.

The Roses have benefited greatly from the heavy dressings of manure, which have been applied to them, and are blooming very well both by the main entrance and in the new trial beds near Wisley village. Varieties which are flowering particularly well include Salmon Spray, Isobel, Pink Delight and Madame E. Herriot.

In the rock garden many species of Cistus are still in bloom, but the majority of Helianthemums are now over. An exception is H. Tuberaria, which has yellow flowers and large leaves that are a distinct feature of this plant.

A large group of Primula Littoniana is now in bloom, and another bright patch is formed by the flowers of Erythraea diffusa, a dwarf, pink-flowered alpine. The pink flowers of the British wild Centaury, Erythraea Centaurium, may also be found in the rock garden. In the alpine house an unnamed, dwarf, lilac-flowered Rhododendron is unexpectedly flowering, and a number of Campanulas, including C. Hendersonii and C. Stansfieldii are in bloom, while in the alpine frames is an attractive looking pan of Campanula attica.

A new building is in course of erection, not far from the Garden Keeper's house. It is to be faced with Elm boarding and will have a roof of old tiles. This will be used as a bulb store, and includes a room in which fruit will be exhibited. *J. E. Grant White.*

HARDY FLOWER BORDER.

HEMEROCALLIS.

The Day Lilies, members of the genus Hemerocallis, are easily-grown, summer-flowering plants, admirably suited to the herbaceous border or for forming masses in the wild garden or woodland. Being moisture-loving plants, they are also suitable for planting near streams. Although the individual flowers remain in beauty only a short time, many of the plants produce quantities of flowers which succeed each other rapidly and thus ensure a display of colour over a considerable period.

The predominant colour is yellow, which varies in depth of shade from the clear, canary-yellow of H. flava to the deep golden, almost coppery-red flowers of H. fulva. Both these species are natives of Southern Europe and with their varieties are the most useful for all purposes. H. flava is the more graceful plant, producing ample leaves with numerous flower-spikes thrown well above the foliage, each spike bearing about a dozen bright, canary-yellow flowers of delightful fragrance. Its variety major is also an excellent plant. H. fulva is a somewhat stronger growing plant, and one of the best for the woodland garden, where its rambling habit is less liable to encroach than in the border. It is also very suitable for planting on the banks of a small stream where water is within reach of the roots.

H. Middendorffii, an Asiatic species, is a good plant of neat habit, and one of the earliest to flower. It is of compact growth and produces freely its deep, orange-coloured flowers. H. Dumortieri is a plant of dwarfer habit, bearing soft yellow flowers with reddish-brown reverse. It flowers freely and is worthy of a position in the front of the border.

There are numerous hybrids of comparatively recent introduction which add considerably to the decorative value of the genus. Notable amongst these are Apricot, with richly-coloured, apricot-orange flowers, sweetly scented; Orange Glow, with rich orange, broad-petalled flowers produced very freely; and Sovereign, with soft yellow flowers which are coloured a rich brown on the outside. *A. P. C.*

PRUNELLA WEBBIANA.

Sometimes known as Brunella Webbiana, which name is considered correct by many authorities, this low-growing, herbaceous plant is suitable for growing in the foreground of the herbaceous border. Free in growth, it spreads rapidly by means of decumbent stems rooting from the nodes, the stems afterwards becoming erect to bear large, terminal heads of rich purple flowers. These large, hooded flowers, with lips of a lighter shade and red-brown calyces, are borne in closely-packed whorls, and situated at the base of each whorl are two broad, hairy and red margined bracts, the combination of reddish-brown and purple producing a very striking effect.

The leaves at the base of the stems are very long-petioled, while those directly beneath the flower heads are sessile, in fact, stem-clasping. They are sometimes as much as four inches long and deeply lobed, the lobes being large and irregular, while both surfaces are hairy and of a light green colour.

The plant is perfectly hardy, suffering no ill-effects during the winter and thriving in any ordinary garden soil that is not excessively heavy in texture. *A. G. F.*

CAMPANULA PHYCTIDOCALYX.

This delightful Campanula is also known under the name of C. amabilis, but for some reason it does not appear in catalogues unless it is under another name. We have grown it it as C. phyctidocalyx for several years, and although it is quite hardy, it cannot be considered a satisfactory species if left to itself for two or three years.

It is not unlike some forms of C. persicifolia, and attains a height of eighteen inches or two feet. It is most effective when provided with a few twiggy supports to keep the spikes in an upright position. It is a handsome species, a native of South Armenia; the large flowers are a purplish-blue with a paler eye, while the leaves are spoon-shaped and pleasingly crimped.

This plant apparently requires to be divided and replanted frequently or given a top-dressing of soil soon after the flowering period. We divide the plant annually, about September or October, and each year the flower spikes are freely produced, while occasionally a few seedlings appear around the old plants, these flowering in their second year.

Although large numbers of other Campanulas are in cultivation this species should certainly be given a trial, for it is one of the best during June, either for the border, or on a large rock garden. *T. W. B.*

INDOOR PLANTS.

BILLBERGIA NUTANS.

A few pot plants of this Bromeliad form a pretty feature in the warm house during February and March. The long, sword-shaped leaves are arranged in vasiform manner and furnished with spines along the margins. The flowers are borne in short, loose, drooping racemes. The sepals are pale red and the petals green, tipped with blue. It is the large rosy red bracts, however, which form the most conspicuous feature of the inflorescence, and give to the plant its decorative appearance.

Billbergia nutans grows well in sandy peat mixed with a small qauntity of good, fibrous loam. It requires a position in a warm house in full sun, and should be kept moderately moist during the winter, but the supply of moisture at the roots should be fairly liberal during the summer; at this season also the plants should be syringed two or three times daily. Growths which have flowered should be cut away. Propagation is easily effected by means of the numerous suckers produced. *T. H. Everett.*

WINTER-FLOWERING BEGONIAS.

Young plants of Begonia Gloire de Lorraine should be transferred to larger pots. These Begonias are generally grown in several batches, and while some will be ready for placing in six-inch pots, others should be grown on from their cutting stage in small receptacles.

The compost for the larger plants may consist of equal parts turfy loam and leaf-mould mixed with dried cow manure, and a liberal dash of silver sand added to render the soil porous.

In potting these Begonias it is not advisable to use a rammer; sufficient firmness of the soil may be obtained by pressing the compost with the fingers. The plants dislike lime in any form, and where the service water is found to contain lime in any quantity they should be watered with rain water.

If a late batch of these Begonias is required, cuttings may still be inserted in small pots filled with a light, open mixture. So soon as the plants that constitute the early batch have formed plenty of roots, give the latter a mild stimulant in the form of weak soot-water; this will tend to make the foliage dark green.

Begonias of the Optima type will also need repotting as they become ready. Similar compost as that for the Gloire de Lorraine type may be used. Fumigate the plants at intervals to keep aphis and mite in check, as these Begonias are very susceptible to attack by these pests. *T. P.*

JACOBINIA CHRYSOSTEPHANA.

The Natural Order Acanthaceae includes many of the most decorative of our warm-house winter-flowering plants, and amongst them Jacobinia chrysostephana, a native of Mexico.

The narrow, tubular, orange-coloured flowers are produced in dense corymbs and a well-grown batch of plants forms a bright and striking feature on the stages of the stove or intermediate house. The foliage is handsome and deep, rich green in colour.

Propagation is easily effected by means of cuttings inserted in the spring. These if placed singly in small pots, or three or four around the sides of a sixty-sized pot, and plunged in a warm propagating pit, soon develop roots. The plants may then be potted on, a suitable compost consisting of two parts loam, one part leaf-mould, and one part peat with sufficient sand to render the soil open and porous.

Every attention should be given to the plants to form stout growths as they furnish the finest flower heads, and the growing points should not be pinched.

If single-stemmed plants are objected to, three plants may be grown together and potted on in six-inch or seven-inch pots, or good specimens one-and-a-half feet to two feet high may be grown in forty-eight-sized pots.

This Jacobinia needs a stove temperature at all seasons. Forcible syringings with clear water are necessary to keep red spider in check. When the plants are established in their final pots, diluted soot-water and manure water, applied two or three times weekly, are helpful to growth.

This plant is figured in *Bot. Mag.*, tab. 5,887, under the name of Cyrtanthera chrysostephana. *H. T.*

ORCHID NOTES AND GLEANINGS.

DISA ITALIA PINK DOMINO.

On the occasion of the Amateur Show, held by the Royal Horticultural Society, on June 28, the first prize for a new garden plant was awarded to Col. Stephenson R. Clarke (gr. Mr. S. R. Conn), Borde Hill, Sussex, for Disa Italia Pink Domino, a particularly beautiful Orchid with deep pink dorsal sepal and bright rose-pink petals. There were several spikes of flowers, suggesting a robust constitution and a free-flowering habit. At the R.H.S. meeting on Tuesday last the plant was given an Award of Merit. The parentage of this fine hybrid is Disa Blackii × D. grandiflora.

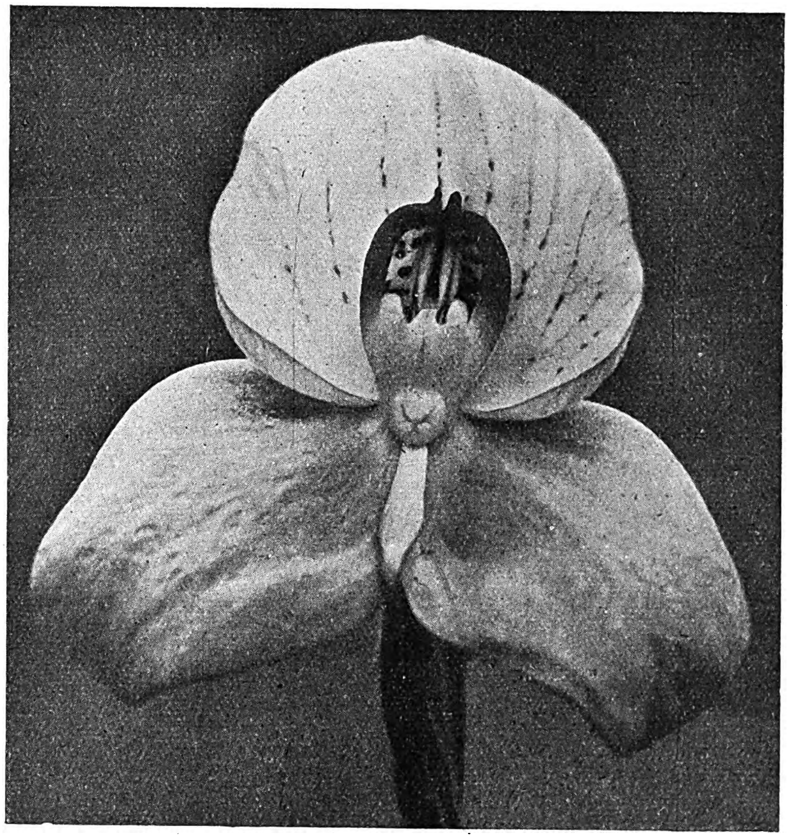

FIG. 26—DISA ITALIA PINK DOMINO.

CYPRIPEDIUM ROTHSCHILDIANUM.

This Cypripedium, named after the late Baron Ferdinand de Rothschild, of Waddesdon Manor, near Aylesbury, was introduced in 1887, and first flowered the following year.

It was described in *Gard. Chron.*, III., s. 3. (1887), p. 457, when Messrs. Sanders, of St. Albans, are credited with its introduction to cultivation; but this was disputed by the Director of L'Horticulture Internationale, Parc Leopold, Brussels, who stated that it was Mr. J. Linden who first introduced it from New Guinea; this again has been contradicted, and the species was said to have come from Borneo.

From a horticultural standpoint, these differences are not of much interest now, but C. Rothschildianum, and its progeny, at the present time comprise a family of remarkable plants, which produce their flowers at this season of the year, and maintain the interest of a most popular family of Orchids. C. Rothschildianum received a First-Class Certificate from the R.H.S. so far back as March 12, 1889, and several varieties of superior merit have been shown from time to time under varietal names.

C. Rothschildianum is a robust grower, a quality it imparts to the major part of its progeny, the whole of which produce tall spikes of handsome flowers, and even when not in bloom their long, green leaves are decorative. All require the temperature of the warmest house, and liberal treatment at all times.

Some fifty hybrids are recorded, in which most of the popular species have taken part, whilst a proportion of hybrids are also parents. As each variety passes out of bloom it should be attended to as regards potting; all that require new material should have attention, those that will thrive for another season passed over, thoroughly cleaned and placed in their growing quarters. Ordinary flower pots are the best receptacles for these strong-growing plants, but in no case must they be over-potted. The ordinary Cypripedium compost of peat and A.1 fibre will answer their requirements, but too much loam fibre must not be added, as the majority make strong roots in proportion to the strength of the plant.

After repotting, water may be given to settle the compost around the roots, but care must be used in the application of water afterwards, as the best compost, also the roots of the plant, are easily ruined at this stage by a superabundance of water.

When established, copious supplies of moisture should be given whenever the roots become dry, and especially when the plants are in active growth.

Light overhead sprayings of soft, tepid water, on bright days are beneficial and aid in keeping the plants clean and healthy. Cypripediums thrive in plenty of atmospheric moisture, and are very rarely attacked by thrips and other insect pests, where it is supplied.

Amongst the best of the hybrids derived from C. Rothschildianum are C. Rolfei, C. Edith, C. callo-Rothschildianum, C. Transvaal, C. A. de Lairesse, C. Daisy Barclay, C. Jupiter, C. Shillianum, C. Shakespeare, C. Neptune, C. Wiertzianum, C. l'Ansonii, C. St. Swithin, C. Prince Edward of York, C. W. R. Lee and C. C. Pelican. *J. T. Barker.*

SOME NOTABLE ROCK ROSES.

Few who know it will be other than willing to grant Cistus wintoniensis a foremost place among the most beautiful and distinctive of its race. Indeed, I consider it the most striking addition made to this fascinating genus for many years. With me, C. wintoniensis promises to be rather a low-growing shrub of somewhat prostrate habit. The branches are slender and the broad, well-rounded leaves are a pale sage-green tending to grey. The pure-white, cupped or bowl-shaped flowers have broadly overlapping petals, each with a wide, daintily feathered band of crimson-maroon near the base; they are fully two inches across. Unlike the colour blotch in all other white Rock Roses the band of colour forms an unbroken ring, within which there is a zone of bright yellow. A wreath of orange stamens encircles the white stigma. This very charming shrub was raised by Messrs. Hillier a few years ago. It is believed to be a hybrid between Cistis and Helianthemum, which gives it an additional interest. It received the R.H.S. Award of Merit in April of last year.

C. recognitus is another variety of outstanding merit. I refer to the shrub which appears to be in general cultivation by the trade under that name, and not to the C. laurifolius × C. monspeliensis hybrid alluded to as C. recognitus by Mr. W. J. Bean in *Trees and Shrubs Hardy in the British Isles*. The latter, one presumes, has unspotted flowers, whereas those of the former are faintly flecked on each petal with a pencilling of vivid carmine. The blooms are rather more than three inches across; they open flatly and are produced in such prodigious numbers that while the shrub may be sheeted with blossom the ground beneath is covered with a mat of fallen petals. C. recognitus grows some four feet or five feet high here, thus being rather taller than C. Loretii, to which it bears some resemblance. Its fresh green leaves are narrower than those of the last-named hybrid, and they emit, especially in spring, a delicious fragrance suggesting that of the Lemon-scented Verbena. I do not know of any other Cistus which has this particular and delightful fragrance.

C. ladaniferus var. immaculatus is a singularly beautiful member of this genus and one that will always hold its own in any collection. It is very similar to the type, the chief point of difference being in the flowers, these being pure white with no trace of a colour-blotch. They are larger than those of C. ladaniferus, sometimes measuring so much as five inches across. The foliage is a paler, more grassy-green, and the young wood often has a distinctly golden hue.

Of Cistuses, other than white, C. purpureus must still be accorded first place, though the very beautiful and distinctive C. Silver Pink is no less attractive in it own way. But there are, unfortunately, a good many forms of C. purpureus in gardens and nurseries which are not nearly so pleasing in colour, if as large in blossom, as an older type now not so often seen. In this latter the flowers have less of the rather hard, bluish-purple of C. villosus in their colouring, and a more decided infusion of a warm red. *A. T. J.*

FLOWER GARDEN.

DELPHINIUMS.

Delphiniums are now at their best, and few border flowers are more majestic and beautiful. In a collection growing under typical garden conditions, the following varieties appeal to me as being of special merit. Amongst the singles Lord Lansdowne is remarkably fine. The individual blooms, which open well, are of very large size and a rich blue, even for a Delphinium.

Colonel Wyndham Murray is a valuable bi-coloured single, being notable for the length of the individual spike. The flowers are blue with white centres, giving a very charming effect.

Blue Boy is the most vigorous Delphinium in my collection. The plants are well over six feet in height, and they are flowering in a very generous manner. The colour is dark blue. In Capri, the spikes branch freely and the effect is pleasing. The colour of the flowers is like that of the sky on a perfect summer day—so delicate a blue that it must appeal to all. In my garden the plants attain little more than three feet in height.

King of Delphiniums is a very appropriate name for the variety which bears it, for the double flowers are truly regal in appearance. There is a well-marked white centre in the flowers, surrounded by petals which assume the colour of a blue Gentian flower.

Amos Perry is a shade of mauve-blue, and is one of the most beautiful of Delphiniums. The habit of the plants leaves nothing to be desired.

My herbaceous border is situated in front of a wall of weathered mountain limestone, and the contrast between the wall and deep blue, double flowers of the variety Francis Fox is very charming. The variety would look charming anywhere, and it should be included in all collections.

The colour of the flowers of Mrs. Shirley are difficult to describe, for the pigments are so elusive. The centre is white with a suspicion of mauve in it, while the outer part is a mixture of lilac and mauve. The plants grow six feet tall and they flower with great profusion.

Andrew Carnegie is one of the most vigorously growing varieties. The plants have very thick stems and bold leaves. The spikes are of great length and the soft blue flowers of enormous size. It is a variety which may be highly recommended. *Geo. H. Copley, N.D.H.*

LINUM ARBOREUM.

In a family of mainly blue-flowered plants, Linum arboreum is a distinct species, with pale yellow flowers borne in a constant succession from May to August.

Unlike L. perenne, this forms a six- or nine-inch bush of stout stems, clothed nearly to the base with grey-green, spoon-shaped leaves.

The shoots grow rapidly in early spring, and on sunny days the plants are gay with their numerous flowers.

It is an excellent plant for a sunny position on a rockery or dry wall and may be planted singly or in clumps. An effective and unusual use would be as an edging to a pathway or border. *L. Le C. T.*

SALVIA FULGENS.

The Cardinal Sage, as this attractive species is termed, is a useful plant for late summer effect. It is a vigorous grower, woody at the base and producing strong, slightly downy growths to a height of from two feet to three feet. These are clothed with bright green, long petioled leaves which are cordate in shape and sharply pointed, the margins being serrated, while both surfaces, especially the under one, are clothed with soft down.

The flowers are very conspicuous, the corollas being of a rich, deep scarlet; they are about two inches in length, and protrude from downy, dark-red-tinted calyces. Flowering commences about the middle of July and continues until checked by frost, the flowers being produced in whorled racemes up to twelve inches in length.

This Salvia is best treated as a bedding plant as it seldom survives the winter. Cuttings of it root readily and if wintered in a frost-proof place, will make strong flowering plants if put out during the latter part of May. *A. G. F.*

SALVIA FARINACEA.

This very pretty perennial is not fully hardy in this country, except in well favoured localities, and is in consequence usually treated as a half-hardy annual. It succeeds quite well when treated in this way, and produces its flowers freely during the late summer.

Those plants which were put out in 1926 have withstood the rather mild weather of the past winter, and are making fine, bushy specimens. The seeds should be sown in heat at the end of February, and when the seedlings are sufficiently large to handle, they may be pricked off into boxes at two inches apart. They should be grown on in a warm greenhouse or pit until such time as the weather is favourable for their removal to cold frames.

After gradually hardening them off, the young plants may be put out in their flowering quarters after the middle of May. A better effect is produced by massing than can be obtained by planting in rows.

Salvia farinacea attains a height of about two feet but its somewhat upright habit necessitates rather closer planting than is usual for plants of this height. *Charles Hodgson, Acton Place Gardens, Sudbury, Suffolk.*

SENECIO ABROTANIFOLIUS.

This plant, when in bloom, is from nine inches to twelve inches high. The colour of the flowers is brilliant orange, each bloom being about one and-a-half inch across, but owing to the somewhat loose arrangement of the petals and the open way in which six or seven blossoms are set at the end of the stem, the whole effect is most pleasing, light and graceful.

The deep green, Ferny foliage is also an additional charm. Although the plant is a good grower, it is by no means coarse, and when in bloom it ranks among the best of flowering plants, especially if associated with one of the pale blue Campanulas. It requires a well-drained soil, and a light, rich, rooting medium, such as loam, peat and leaf-mould, with a liberal addition of sand. Senecio abrotanifolius will thrive in the ordinary flower border, provided the soil is not on the heavy side. *T. W. B.*

TREES AND SHRUBS.

RHODODENDRON YEDOENSE.

(See Supplement Plate.)

The handsome, double-flowered Rhododendron yedoense has already attained considerable popularity in this country, especially among lovers of Rhododendrons and Azaleas. Although it bears the generic title of Rhododendron, this species will be regarded as an Azalea by most gardeners because of its habit and leafage.

Mr. E. H. Wilson states* that "This double-flowered Azalea, in recent years exported from Japan in some quantity to the gardens of Europe and America, is certainly nothing but a monstrous form of R. yedoense var. pukhanense, Nakai. My Korean specimens came from a plant which had been found wild not far from Mount Poukhan, and transplanted to the Government Forestry Experimental Garden, and are indistinguishable from others taken from plants cultivated in the Arnold Arboretum. The habit is spreading and more lax than in the type except when the latter grows among tall bushes. The flowers are quite double, and the corolla is rose-purple and much less beautiful than that of the type; the calyx is green, often larger than in the type, with oval segments. The leaves are characteristic and have the impressed veins on the upper surface. This form seems to have become known in our gardens comparatively recently, and to have been first introduced into Petrograd by Japanese and exhibited at the International Exhibition there in 1884. It is perfectly hardy in the Arboretum. Matsumura gives 'Botantsutsuji' (Paeony Azalea) as the vernacular name of this plant."

R. yedoense is perfectly hardy and free-flowering, producing its rosy-purple, double flowers in great profusion on somewhat lax branches which suggest that some amount of pruning will be necessary to keep a specimen shapely. Many cultivators exhibited R. yedoense at the Rhododendron Show this year, but the finest sprays of blooms were those shown by Lady Aberconway and the Hon. H. D. McLaren (gr. Mr. Puddle), from Bodnant, and it was from a photograph of these flowers that our Plate was prepared.

The authors referred to above consider that the wild type of R. yedoense is really R. y. var. poukhanense, which is found in many parts of

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* *A Monograph of Azaleas*, by Ernest Henry Wilson and Alfred Rehder.

Korea; they suggest that the type is usually a compact, densely-branched shrub from a few inches to a metre in height; they also refer to the fine orange and crimson tints of the more or less deciduous foliage in the autumn, and state that the flowers are in clusters of two or several, rose to rose-purple, remarkably fragrant, with an ample green calyx.

NUTTALLIA CERASIFORMIS.

Nuttallia cerasiformis—the Oso Berry—sometimes known as Osmaronia cerasiformis, is an upright, deciduous shrub, from six to ten feet high, and often more through. It has large, bright green, oblong leaves, which are acute at both ends, glabrous above, pubescent beneath. It is generally grown for its small, white, sweet-almond-scented blossoms, which are borne in pendulous racemes from the leafless shoots in March. It is a dioecious species; the flowers of the male plant are the more attractive, being larger than the flowers of the female plant, but the latter is well worth growing in the vicinity of the male plant for the sake of its abundance of oval-shaped fruits, which are, ornamental drupes, one-quarter to one-third-of an-inch long, somewhat resembling small Damsons in appearance. These are green at first, turning to yellow, then to reddish-purple, and finally to bluish-black when ripe, and both when the fruits are at different stages of ripening or when all have reached the ripe stage, the fruiting plant is very ornamental (Fig. 27).

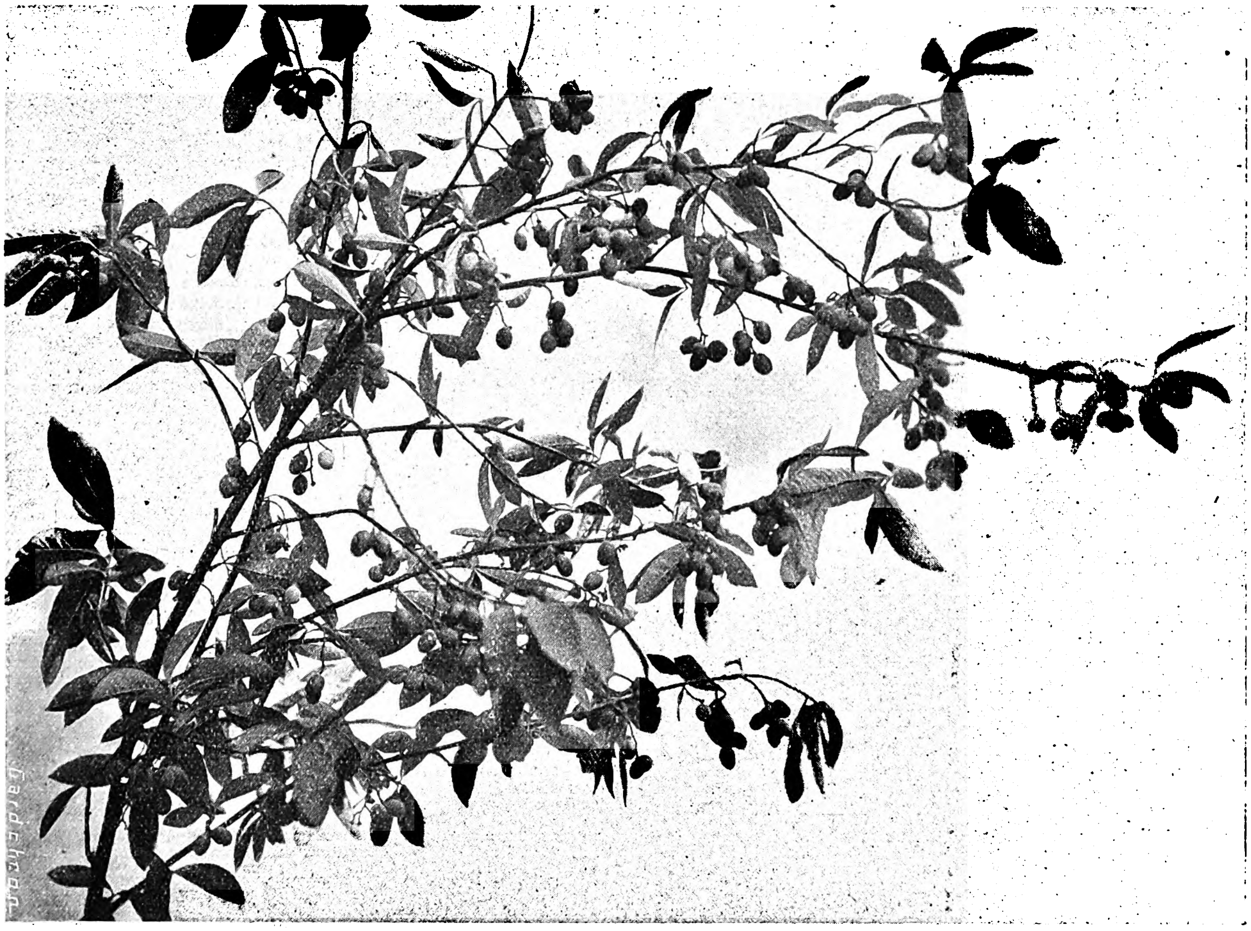

FIG. 27.—FRUITING BRANCHES OF NUTTALLIA CERASIFORMIS.
R.H.S. Award of Merit, July 5. Shown by the Director, Cambridge Botanic Garden. (see p. 38.)

N. cerasiformis is closely allied to Prunus, differing in its five-carpelled flowers, and although occasionally one finds all five carpels developed usually only two or three do so.

The Nuttallia, or Oso Berry—to give its common name, was introduced into this country in 1849 from North California, where it is a native, growing on the margins of Pine woods. It is perfectly hardy and will thrive in any loamy, well drained soil.

Here, in the Botanic Garden, Cambridge, it produces its attractive fruits quite freely most years, where the staminate and pistillate plants are growing within a few feet of each other, and, needless to say, this, of course, is necessary.

Nuttallia cerasiformis is readily propagated from suckers, which are freely produced, or from seeds. The fruits are strongly Almond-scented and very bitter, but are readily devoured by birds when ripe. *F. G. Preston, Botanic Garden, Cambridge.*

STYRAX WILSONII.

This very attractive shrub has flowered exceptionally well this season, a specimen some six feet in height being full of blossom from base to tip throughout June and part of July. The nodding, widely-cleft, bell-shaped flowers, each about three-quarters-of-an-inch across, are borne singly at the leaf axils, their delicately-cut corollas being in happy harmony with the slender branches and thin, elegant habit of the shrub.

S. Wilsonii was introduced by Mr. E. H. Wilson in 1908. It is a deciduous shrub, and here it does very well in a border in light loam. The ends of the shoots are sometimes nipped by frost, but beyond that it has never suffered injury in winter. Plants raised from cuttings, will often flower in their first year, that is, when only a few inches tall. *A. T. Johnson, Ro Wen, Conway, North Wales.*

CARPENTERIA CALIFORNICA.

A native of California, this splendid shrub was discovered by Colonel Fremont about the middle of the last century; it was first flowered in this country in Miss Jekyll's garden in 1885.

Not only is C. californica a remarkably beautiful shrub, with its clusters of large, white blossoms, which bear a superficial resemblance to those of Anemone japonica, but its flowers are fragrant, and they appear from early July onwards, just when many other shrubs are going off. The plant is not hardy everywhere, but it is, nevertheless, grown very successfully with the shelter of a wall in many somewhat bleak counties. It is a lime-lover and delights in a calcareous loam, but it will succeed in any average, well-drained soil in exposure to full sun, provided it is protected from cutting winds and draughts.

C. californica is an evergreen and allied to Philadelphus. It will attain to a height of seven feet or even more, but is most frequently seen as a bushy shrub of about half that stature, with a tendency to a leaning or trailing habit, which renders it a useful subject for the bolder parts of the rock garden. This fine shrub is easily raised from seeds or cuttings struck in a cold frame in August. It belongs to the Natural Order Saxifragaceae. *A. T. J.*

HEDYSARUM MULTIJUGUM.

Early in July a fine specimen of this beautiful and unusual shrub was making a brilliant display in the interesting garden of D. Shoolbred, Esq., Chepstow, Monmouthshire. For some reason it is rarely seen in gardens, but it is of value on account of its late flowering, as its blooms develop from June till September.

The plant is a native of Mongolia, where it is found wild in dry areas, a fact which proves that it would be useful for planting on dry banks, and more especially in sunny positions, where the soil is light and well-drained.

H. multijugum belongs to the National Order Leguminose, and the reddish or rosy-magenta flowers are Pea-shaped and produced in racemes. It is of bushy habit, grows three feet to four feet high, and is very effective in a group or as an isolated specimen in close proximity to the rock garden. In some situations it grows somewhat straggly in habit, but this may be obviated by pegging down the growths. Layering is also a very good method of increasing the stock; it may also be raised from cuttings inserted during July and August in a cold frame *B.*

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BRITISH GUIANA.

BRITISH Guiana is situated on the North-east shoulder of the South American mainland and has an area of 89,480 square miles. Although so near the Equator its climate is not unbearably hot at any season, particularly in the coastal area where fresh sea breezes blow steadily, with little intermission, so that life generally is not intolerable for Europeans, and during the first months of the year it is distinctly pleasant.

The colony may be divided roughly into three belts, a flat, swampy strip of marine alluvium, varying from ten to forty miles in depth, which rises gradually from the coast; a somewhat broader and elevated tract of country consisting chiefly of undulating land traversed in places by sand-dunes rising from fifty to two hundred feet above sea-level; and the more elevated portion lying towards the south, which contains the three principal mountain ranges. Much of this land is forest-clad, but on the southern side there is a grass-clad, elevated plain or savannah, about 500 to 700 feet above sea-level.

Georgetown, the capital and seat of Government, with a mixed population of nearly 60,000, is the chief port of entry for the colony, and is situated at the mouth of the Demerara river, on its right bank.

The flat plain which forms the coast land is unattractive, and is to a considerable extent below the level of high tides which flood the unprotected parts. Its margin is covered with dense growth of the Mangrove (Rhizophora) and Courida (Avicennia nitida), the matted roots of which make an effective natural sea wall. Behind this growth are flat, grassy savannahs, mostly inundated during the rainy season.

The city itself has all modern conveniences, fine shops, handsome public buildings and attractive private residences, surrounded by a wealth of flowering plants and luxuriant vegetation. Many of the streets consist of two ways for vehicular traffic, with a central avenue, between grass borders, shaded by ornamental trees, for the use of pedestrians.

The flora of British Guiana is full of interest, and although each region possesses its distinct plant associations, the transition from one region to another is, for the most part, gradual. The vegetation on the sea-shore fringe consists largely, as already stated, of Courida, the lateral roots of which grow upwards into the air from the swampy soil in order to provide the necessary air for those roots growing in the mud. At low tide these matted roots appear as giant, dull brown, reed-like masses, and they are well-adapted to resist the force of the sea and prevent the muddy shore from being washed away. Mangroves sometimes appear on the seashore, but become much more abundant in the muddy swamps at the mouths of the rivers. The Black Mangrove (Rhizophora Mangle) is the more common, but the White Mangrove (Laguncularia racemosa) is prevalent. The Mangrove sends out large numbers of aerial roots which extend, stilt-like, downwards, and act as props, so that the general appearance of a Mangrove "bush" is a confused jungle of roots between the branches and the swamp below. In some places along the seashore and up the rivers the dark green Courida and Mangrove bush is interrupted by a lower-growing bush of lighter hue. This is the impenetrable Bunduri (Drepanocarpus lunatus), the prickly branches of which float with the rise and fall of the water. Small tracts of open, swampy land also occur, which are covered with the giant Swamp Fern (Acrostichum aureum), which is also found in abundance in the front pasture lands of the sugar estates, together with the Bull-rush (Typha domingensis) and the Bizzy-bizzy (Cyperus articulatus). In the trenches by the sides of the public roads and on the sugar estates are to be seen the handsome white Water-Lily (Nymphaea amazonica), the beautiful Water Hyacinth (Eichornia coerulea and E. azurea), the interesting Water Lettuce (Pistia Stratiotes and the Sacred Lotus (Nelumbium speciosum).

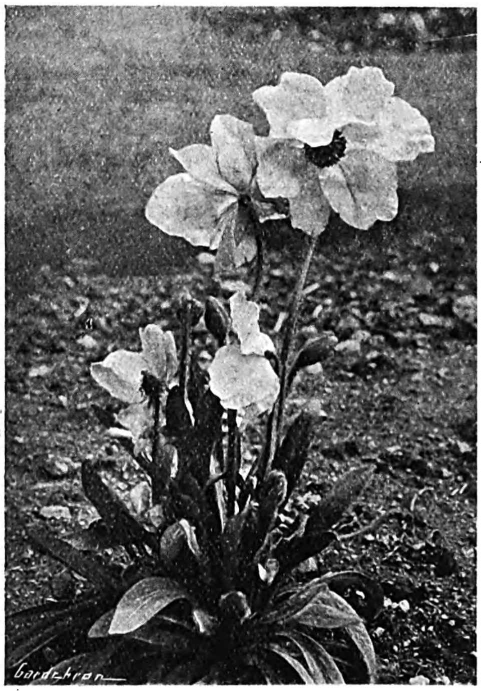

FIG 28.—YELLOW-FLOWERED VARIETY OF MECONOPSIS SIMPLICIFOLIA.

(see p. 71.)

Higher up the river the vegetation becomes more mixed, and the number of species larger. Very conspicuous is the giant Aroid, Mukka-mukka (Montrichardia aculeatum), which is common to most of the rivers. This has shiny, arrow-shaped leaves and Arum-like flowers, and often grows to a height of fifteen or twenty feet. The Konaheri and the Konaheri-balli (Pachira aquatica and P. insignis), the former with yellow, and the latter with dark red, tassel-like flowers, attract attention, their conspicuous, brown fruits resembling Cacao pods. Other prevalent plants are the Trysil (Pentaclethra filamentosa), the Dalli or Wild Nutmeg (Myristica surinamensis), the beautiful Wakenam Lilac (Jacaranda ovalifolia), and the Manni (Moronobea coccinea), easily recognised by the deep crimson of its flowers. The trees along the river banks are draped with climbing plants, including Bignonias, Bougainvilleas, and Odontodenia speciosa, with pretty, yellow flowers.

Where clearances have been made in the original forest and secondary growth has taken possession, Pampwood (Cecropia peltata) and Long John (Triplaris surinamensis) are common. Large specimens of Mora (Dimorphandra Mora) occur along the flat, clay banks of the rivers, and their massive trunks and strikingly beautiful foliage make them objects of great attraction. Further away from the rivers larger trees are noticeable, and one of the most conspicuous is the Silk Cotton (Eriodendron anfractuosum). This has a huge spread of branches, and when the fruit buds burst, the whole of the surrounding vegetation becomes covered with soft, silky down, by means of which the seeds are dispersed by winds.

Throughout the whole of the alluvial region Palms are plentiful and arrest attention by reason of their graceful beauty and variety. The beautiful Manicole (Euterpe edule) is widely distributed, and in places becomes almost a forest tree, while E. stenophylla, a more slender-growing but similar plant, is often found in companionship with it. The Iti (Mauritia flexuosa) is found in great abundance growing on low ground that is flooded in the rainy season. It is easily recognised by its column-like stems, surmounted by a crown of large, dark green, fan-shaped leaves. The young, unfolded leaves of this Palm provide the Indians with Tibisiri fibre for their hammocks. The Kokerite (Maximiliana regia) is probably the grandest of all British Guiana Palms. It occurs practically all over the colony except on the immediate coast land, and is a striking plant at all stages of its growth. The Truli (Manicaria saccifera) and the Dahlibami (Geonoma baculifera) are both common, and their leaves are used for thatching purposes, while the Avarra (Astrocaryum tucumoides), the Paripi (Guilielma speciosa) and the Kamawarri, a trailing Palm, are worthy of notice.

Very few Orchids appear in the lower reaches of the river, but they become abundant and conspicuous higher up. Several species of Catasetum and Epidendrum are common, the red-flowered Rodriguezia secunda appears on the eastern side, while the charming Ionopsis paniculata, the delicate white and mauve flowers of which remain in beauty a long time, and the pretty Oncidium iridifolium are found in the north-west. Vanilla planifolia is also common in some parts and covers the trunks of trees but does not appear to set its fruits freely by natural means. Among epiphytes the Bromeliads are frequent, and in some places large colonies of Bromelia spicata and Tillandsia usneoides are met.

The vegetation along the banks of the creeks which drain the wet savannahs becomes thinner and dwarfer as the swampy region is approached. The Monkey Apple (Anona palustris) and the White Cedar (Tabebuia longipes) are commonly seen, while towards the heads of the creeks species of Crinum in flower are met here and there as also are the sub-aquatic Orchid (Habenaria longicauda), and species of Limnanthus. Sometimes an inland lake opens out to view and handsome Water Lilies present an attractive picture. In the early morning the large, snow-white flowers of these Lilies may be seen to perfection on the smooth, dark-coloured water, and between the large, flat, floating leaves appear the pretty yellow and blue-flowered Utricularias and the graceful, floating shield of Cabomba aquatica.

Between the rivers are often to be found slightly elevated, sandy, intermediate, savannah lands, covered with grasses and scrub, forming more or less flattened water-sheds. Here grasses and sedges are the predominant vegetation, but many Melastomaceous plants and several Solanums are to be found. Clusias are common and Curatella americana is ubiquitous, while epiphytes are much more common than along the river banks.

The flora of the interior of the colony, in which are numerous hills and mountains, has many distinctive features and varies according to the nature of the soil. A general scarcity of Palms is here noticeable, although species of Bactris and Astrocaryum do occur in places, being represented by fine clumps. Along the Potaro, examples of Wallaba (Eperua falcata) are to be seen, their pendant, flat fruits reaching almost to the water, while on the banks of the Barima the scarlet heads of Brownea coccinea or Rosa del Monta, and the blue spikes of Petrea vulubilis attract attention. In the forest itself it is frequently difficult to determine the larger vegetation and attention is chiefly directed to the numerous species of Selaginella, Hymenophyllum, Trichomanes and Polypodium, the growth of which is encouraged by the shady conditions and moist atmosphere.

The vegetable products of the Colony are of considerable importance, and include Sugar, Rice, Coffee, Cocoa, Cocoanuts, Limes and other fruits, Cassava, Corn, Yams, Sweet Potatos, gums, oils, fibres, rubbers and timbers. The sugar industry is by far the most important and probably Sugar and its by-products find employment, directly or indirectly, for half of the population.

The timber industry is of great importance and offers tremendous opportunities for development by the introduction of modern methods of handling. The great difficulty is that of transport, and the forests at present worked are only those in easily accessible districts. There is said to be upwards of 70,000 square miles of virgin forest. The timbers are very varied in their values and uses, and no fewer than two hundred varieties are listed as common, and twenty-five as valuable. That of the Greenheart (Nectandra Rodioei) is of the greatest commercial importance at the present time. It occurs in an area of 20,000 square miles of forest land, and in one area of 2,360 square miles it is estimated that 300,000,000 cubic feet of this timber is ripe for cutting, whereas the present rate of exploitation is only about a quarter-million cubic feet per annum. It is placed second of the eight woods rated A.1 at Lloyds for ship-building, Teak being the only wood superior to it. The "Fram" was strengthened throughout with it, and the "Discovery" built with it. The timber is more immune from the attacks of "Toredo" in salt water than any other, and experience at Singapore and the Mersey and Newcastle docks shows that immersion for a period of over fifty years has had practically no effect on it.

Para Rubber (Hevea brasiliensis) grows freely on the well-drained flat lands along the banks of the rivers and there is no doubt that a large area is eminently suitable for its cultivation, but owing to a serious outbreak of the South American leaf diseases and the low price of the commodity in recent years, the industry has not made much headway. The production of Balata, as the coagulated latex of the Balata tree (Mimusops globosa) is called, is, however, an important industry. The gum is used in the manufacture of belting and shoe soles, and the demand is considerable, no less than 1,500,000 pounds having been exported in one year.

The production of fibres is very little developed and although trials have been made with the growth of Cotton, little success has been achieved, as introduced varieties are not able to withstand the climatic conditions of the coast lands, and the indigenous Tree Cottons give comparatively low yields. Fibre is prepared from a species of Bromelia cultivated in the north-west district for this purpose. The fibre is strong, of good and bright appearance, and is used for making cordage and hammock ropes. An excellent fibre is also obtained from Malachra capitata, said to be little inferior to Jute, but it is not at present produced on an important scale; nevertheless, the production of fibres offers important possibilities in the development of the industries of the Colony.

Rice-growing has made considerable advance in recent years, and the amount grown, besides meeting local demands, supplies a considerable proportion of the needs of French Guiana and Dutch Guiana and the West Indian Islands. The flat, heavy, coastal lands that have been abandoned after sugar, make excellent Rice lands, and there are very large areas in the colony eminently suited to the cultivation of Rice. The varieties most largely grown are Creole and Berbice Creole, but long-grained varieties are being introduced and meet with favour owing to their heavier cropping capacities. The methods of cultivation generally are primitive, and most of the work is done by hand labour. In many districts the field work is carried out by primitive ploughs and harrows. Cattle are used for the trampling out of the grain and winnowing is done by hand. Improved methods of cultivation are being introduced in some districts on a fairly large scale with gratifying results, and it is not improbable that British Guiana may rank eventually as one of the most important Rice-producing countries of the world. *W. Auton.*

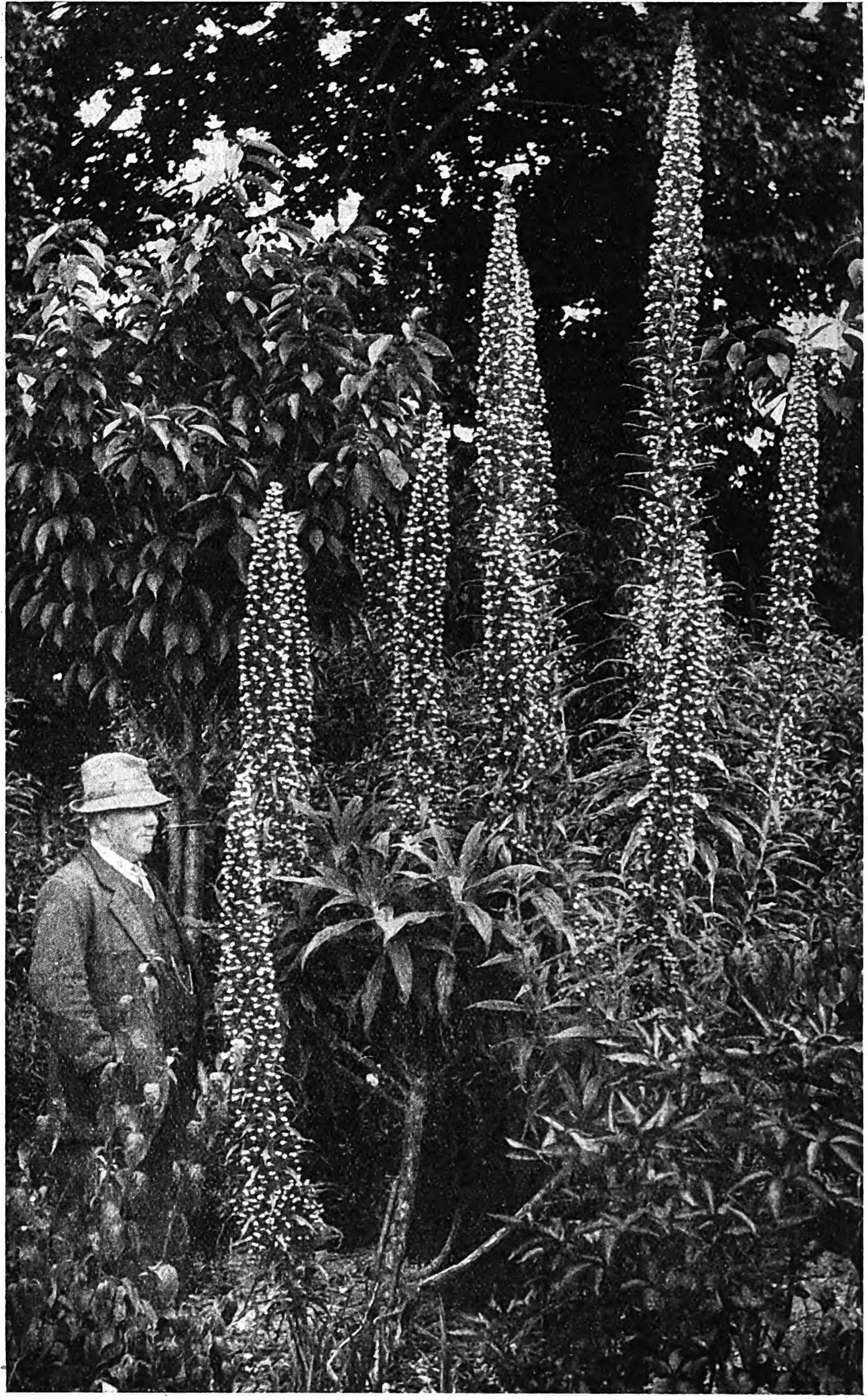

FIG. 29.—ECHIUM SCILLONIENSIS.
(see p. 72.)

PLANTS NEW OR NOTEWORTHY.

MECONOPSIS SIMPLICIFOLIA.

I AM sending a photograph (Fig. 28) of a Meconopsis that has flowered in my garden in Perthshire during the last three years.

The remarkable thing about this Meconopsis is that it is perennial. In the spring of 1924 I sowed home-saved seed of Meconopsis simplicifolia, Bailey's form. The plants flowered in the following year, including the one shown in the photograph, which instead of being blue, had pale yellow flowers.

While all the plants of Meconopsis simplicifolia which flowered, seeded and died, this plant bloomed the following year, and again this year. It comes into flower in early April and was still in flower at the end of June.

On counting the flower stems on June 29, I found that it had twenty expanded flowers, and there were still two or three buds to open. The first flowers to open measured eight inches across, developed on stems eighteen inches high, which spring straight from the stock, not like Meconopsis integrifolia, whose flowers branch from a central stem.

This plant sets seeds, but apparently they are not all fertile, as I could not get any to germinate the first two years it seeded. I have, however, three seedlings from last year's seed, and I am looking forward to seeing these seedlings flower, to find if they prove perennial like the parent plant.

As I grow Meconopsis integrifolia and M. simplicifolia near each other, could this plant be a hybrid from these two species ? The flowers are pale yellow, much lighter in colour than those of Meconopsis integrifolia, but the habit is like that of M. simplicifolia, which flowers on single stems.

If this is a hybrid from these two species, which are both monocarpic, how can one account for it being perennial ?

I shall be glad to hear if any of your readers who grow Meconopsis have had a similar experience. *Andrew Harley, Blinkbonny, Kirkcyldy.*

MR. HARLEY has raised a very interesting plant, which throws some light on a puzzle I met with in Tibet in 1924, where I found an ivory-white Meconopsis ('Ivory Poppy' K.W. 5,766, Fig. 30). This plant was very rare, and it grew with the sky-blue M. simplicifolia. However, it set very little seed, and that, apparently, did not germinate, which agrees with Mr. Harley's experience. At first I thought this 'Ivory Poppy' might be a growth form of M. pseudointegrifolia, which grew not far away; subsequently I decided it was a colour form of M. simplicifolia, but I did not notice it was perennial. That is a curious point, but M. simplicifolia itself is sometimes polycarpic, or of limited perennial growth ; it may be largely a question of vigour and suitable soil conditions, or climate. I doubt if Mr. Harley's plant has any integrifolia in its make-up. Yet, in so far as it has yellow, not white flowers it is a remarkable plant, because there is hardly another known example of a Meconopsis within the same species limit, varying from yellow to blue. I say 'hardly,' but there is a pale creamy-yellow, almost white, form of M. Wallichii, raised both by Mrs. Walter Jones, in Scotland, and by Mr. Armytage Moore in Ireland, with which it may be compared. It will be interesting to see whether the blue forms of these plants can be raised from seeds saved from the cream or yellow flowers. Perhaps Mr. Harley would say what are the colours of the filaments, style and stigma in his plant ! *F. Kingdon Ward.*

MECONOPSIS BAILEYI (?)

ON p. 449 vol. lxxxi. of *Gard. Chron.*, Mr. Grant White, writing from Wisley, refers to this Meconopsis as perennial, and as sometimes confused with M. betonicifolia. On the same page, Mr. McCutcheon, writing from the Edinburgh Botanic Garden, refers to the plant as M. betonicifolia, and infers that it is biennial. In the *Annals of Botany* (No. CLIX, July, 1926), Capt. Kingdon Ward, who found the plant in 1924, in Major Bailey's original (1913) station for it (Lunang) and at the same time of year (July), makes it perennial, and would separate it from M. betonicifolia because of the longer style of the latter, the auricled base of the stem leaves and the almost glabrous capsule. Capt. Ward is for removing both M. betonicifolia and M. Baileyi from the section Bellae to Polychaetia on the ground that both species have barbellate hairs.

This Meconopsis, of which so admirable a photograph was published (Fig. 217) on p. 449, has been available to planters for two years, and though there is ample material in the country for the fullest investigation into the synonymity of Capt. Ward's plant, the mist of uncertainty which settled on it at its first public appearance does not seem to lift as time goes on. Is it too much to hope that Sir David Prain, whose work on Meconopsis has already placed students of the genus under a lasting debt, may be induced to add the weight of his authority to a specific determination of the position of the Wardian plant ?

The question of the perennial or monocarpic character of the plant will, no doubt, settle itself, and it is premature to assume that this Poppy is perennial in Great Britain because of its tufted habit of growth. It is already known from experience that the individual crown dies after flowering, and if the claim advanced for the plant that it is perennial, depends on its ability to throw out side-shoots, as it usually (but not always) does, it would be wiser to suspend judgment on the point, for other species of Meconopsis which are known to exhibit the same peculiarity, are monocarpic. Plants of M. latifolia, for instance, have been known to go on for two years in succession and occasionally for longer periods.

The fact that Capt. Ward's Meconopsis has flowers of different shades of blue, and even pink and blue, on the same plant, presents an interesting problem to physiologists and is hardly to be explained by soil conditions. *Amateur.*

ECHIUM SCILLONIENSIS.

IT may interest your readers to see a photograph (Fig. 29) of Echium scilloniensis growing in this garden. Major Dorrien Smith, of Tresco sent me the seeds in 1925 ; the plants were put out in March, 1926, and passed safely through last winter unprotected. This Echium is probably a hybrid between E. calythyrsum (perennial) and E. pinnianum (biennial), and appears to be a perennial. The plant illustrated is thirteen feet high, and the largest flower spike measures seven feet in length. My gardener, Mr. Buckman, who grew the plant, is standing by it. The seedlings show several shades of colour, from pink to dark blue. Our plants are growing in a calcareous loam. *F. C. Stern, Highdown, Goring-by-Sea, Sussex.*

THE TREATMENT OF BOG AND MARSH LAND.

IT is not unusual to find a tract of bog or marsh land as a natural adjunct to a demesne, generally in vale gardens, where the water draining from the hills collects to form a swamp and wherever such conditions exist it is possible, by judicious treatment, to make a notable addition to the amenities of the garden.

The first essential to the materialisation of a pleasing result is to forego all formality ; paths in the vicinity of the bog and those actually directed to it should partake rather of the nature of mere tracks, sufficiently spacious for comfortable use and rendered serviceable by the introduction at intervals of flat and irregular stones. Similarly, the passage of the bog itself may be rendered practicable by stones, tastefully displayed and submerged to half or rather more, of their depth.

The whole environment, indeed, should gradually and elusively emerge into the marsh ; every effort should be made to devise a scheme of planting which will eventually result in a gradual and almost unnoticeable junction of garden and bog.

If the contour is flat, better and more picturesque results will accrue from the creation, preferably on the north or north-eastern side, of a hillock, gradually rising well away from the bog and finally "fading" into a planting of suitable trees, preferably of a Coniferous character. The tree plantation should be at an appreciable distance away, otherwise the ultimate effect will suffer ; the ground between the Conifers and edge of the marsh may be advantageously planted with such subjects as Bamboos in variety, various Willows, Heracleum giganteum (the Giant Cow Parsnip) and such giant Polygonums as P. cuspidatum (Sieboldii of gardens), and P. sachalinense.

In the rather moister ground adjoining the margin of the bog, an occasional Gunnera, with such Ferns as Osmunda regalis, Struthiopteris germanica, S. pennsylvanica and Onoclea sensibilis will create a noble effect ; on the opposite margins, considerable colonies of Astilbe—the Arendsii hybrids are very beautiful—Iris sibirica, Hemerocallis and Senecio clivorum will create a pleasing colour display. Do not attempt fragmentary planting, rather adopt a policy of bold massing, finding relief in an occasional specimen of goodly proportions, such as a plant of Phormium tenax, P. Cookianum or Gunnera.

Stretches of the Sedges (Carex) will be in character and harmony, whilst spreading from the marsh edge through the Bamboos to the coppice, sheets of Epilobium angustifolium, E. a. alba and Lythrum roseum Lady Sackville, L. virgatum Rose Queen, L. atropurpureum and L. Carmine Queen will provide a fine colour setting.

I strongly advise the introduction of one or more good specimens, according to the extent of the treated ground, of the deciduous Cypress, Taxodium distichum ; the green, Fern-like foliage is beautiful in summer and the resplendent autumnal colouring of this tree is ever a noteworthy feature.

As to the bog itself, the arrangement of a considerable collection of plants and the selection of these is indubitably a matter for individual taste. Primulas will naturally occupy a goodly share of attention and are never more pleasing than when intermingled with such graceful Ferns as Lastrea Thelypteris, Adiantum pedatum, Asplenium thelypteroides and Woodwardia virginica ; the Primulas should be planted generously, of such species as P. japonica, P. Beesiana, P. Bulleyana, P. involucrata, P. sikkimensis, P. helodoxa and the exquisite P. rosea.

Iris Kaempferi should predominate largely ; of a very wide selection of varieties, outstanding sorts are Admiration, Fugimini, Pieter de Hooghe, Tokyo, Van Dyk, Yourishima, Osaka, Heinrich Witte and Giovanni ; of other Irises, excellent effect will result from massed I. Pseud-acorus (the native yellow Iris) and smaller drifts of I. Monnieri and I. orientalis.

A shady corner may form a home for some of the North American Cypripediums and other hardy Orchids, including the brilliant Calopogon pulchellus ; it should not be a difficult matter to introduce a little peat for these interesting plants, and provision may likewise be made, with a few stones, some peaty soil and Sphagnum moss, for such insectivorous plants as Darlingtonia californica, Pinguicula grandiflora, P. vulgaris and the native Drosera rotundifolia.

Bare mention must suffice for a host of pretty plants that may be included in the bog. Trollius in variety, Funkias (of inestimable value), Helonias bullata, Butomus umbellatus, such Gentians as G. Andrewsii, G. asclepiadea and G. Pneumonanthe, the brilliant Lobelia cardinalis, L. syphilitica and varied hybrid forms ; Parnassia palustris, Pratia littoralis, Sarracenia purpurea, S. flava, S. rubra, Calthas in variety, Mimulus in variety, Uvularia grandiflora and many Spiraeas.

The gradual passing of the bog into the garden proper may well afford scope for artistic work of high character and may, with advantage, tend towards creating "homes" for Meconopsis, a woodland and Lily garden and a Fern garden.

The small and irregular arboretum (before-mentioned) may constitute the confine of the treated space in the one direction, and in all other directions the passing of the bog garden should be gentle, almost illusory.

Early autumn planting is advisable for the stronger-growing subjects, those of more delicate character, such as Orchids and Lobelias, being planted in March and April. There is no better time to commence work upon the formation of such a garden than late summer.

Such a piece of work will of necessity be a slow process, and it is better so ; additions may be made as experience dictates, and treasures added as they become available. *Ralph E. Arnold.*

ALPINE GARDEN.

PYROLA ROTUNDIFOLIA.

This beautiful, hardy, native perennial is well worthy of a position on the rockery; for preference, a moist, half shaded situation, and planted in a compost of a light, sandy nature. At this period of the year the plant produces numerous racemes of drooping, white flowers which are exquisitely fragrant, on erect stems from six inches to nine inches in height, rising above the undergrowth of dark green leathery foliage.

P. arenaria is a maritime variety of the type, one of the differential characters being that several scale-like bracts are produced below the inflorescence. This variety enjoys a somewhat sunny position, a compost mainly composed of sand, and abundant moisture at the roots. Once planted, attempt at root disturbance must be avoided, and to assist naturalisation, the grasses around the clump should be allowed to remain except, of course, for an occasional clearing to prevent the weeds from smothering the Pyrola.

In collecting plants for transportation from their natural habitat to the rockery, it is absolutely useless to select small portions; whole squares should be dug up bodily, so to speak, and transplanted in such a condition in a suitable position.

Perhaps the method advocated may prove rather laborious, but it is well to remember that in thoroughness lies the secret of success.

Propagation may be effected by division or the sowing of seeds. In seed-sowing it is advisable to sow on the site where the plants will be grown, in April, as loss of plants transplanted from pans is great. During the growing period throughout the summer, copious supplies of water will be necessary. *T. D. Boyd.*

DIANTHUS ENID.

I have previously drawn attention to the merits of this charming little Dianthus, and it is with pleasure that I observe it is finding its way into the catalogues of nurserymen who make a special feature of good hardy plants. It was growing in my old garden for about four years, and in early May it was removed to my new garden, where it seems to be happy, and is flowering and giving great pleasure with its carpet of small, deep-green leaves and dark crimson flowers.

I have no knowledge of its parentage, but I always surmise that one of its progenitors must have been a good form of Dianthus deltoides, the Maiden Pink. It is quite hardy and may be increased from cuttings or by division. I have not sown seeds, which it produces, but it is probable that in course of time some equally charming varieties might be derived by means of sowing them and of selecting and re-selecting the progeny when in flower. D. Enid will succeed in ordinary light loam, and I have never tried it in any but a sunny position.

DRACOCEPHALUM ISABELLAE.

This Dracocephalum is at present in bloom in my garden, and I regard it as one of the most valuable plants of recent introduction. Its flowering period is stated to be July and August, but with me it bloomed in the first week of July, although this cannot be called an early season, and one in which plants have had many vicissitudes to contend with.

D. Isabellae is an ideal plant for the rock garden or the front of the hardy flower border, but the former is certainly the more appropriate place for such a charming plant.

It grows about nine inches high, and has narrow, graceful foliage on upright stems, and at the summit a raceme of large, deep purple-blue flowers. These are of the true "Dragon's Head" form and, taking it altogether it is a most distinct and exceedingly worthy plant. Its hardiness has been proved by others; it is planted in my garden near the base of the rock garden on a level terrace of moderately good loam. *S. Arnott.*

THE FLOWER GARDEN AT AMPTHILL PARK.

The history of the flower gardens and shrubberies of Ampthill Park dates back upward of three hundred years. Although not outstandingly extensive (ten acres), their historical associations and lay-out are worthy of more than passing interest. The enclosure of the grounds is made complete by a moat, while the situation is in one of the highest and most undulating parts of Bedfordshire.

King Henry VIII must have trodden the grounds of the present flower gardens when hunting deer in the park and surrounding woods—the present gardens being then a wood; and also that unfortunate lady, Queen Catherine of Aragon, King Henry's first wife, must have spent many unhappy hours here during her tenancy of the Royal Castle, pending the divorce proceedings. The royal castle has disappeared ages ago, but its site is marked by a monument erected and still standing to the noble Catherine, concerning whom Horace Walpole wrote:

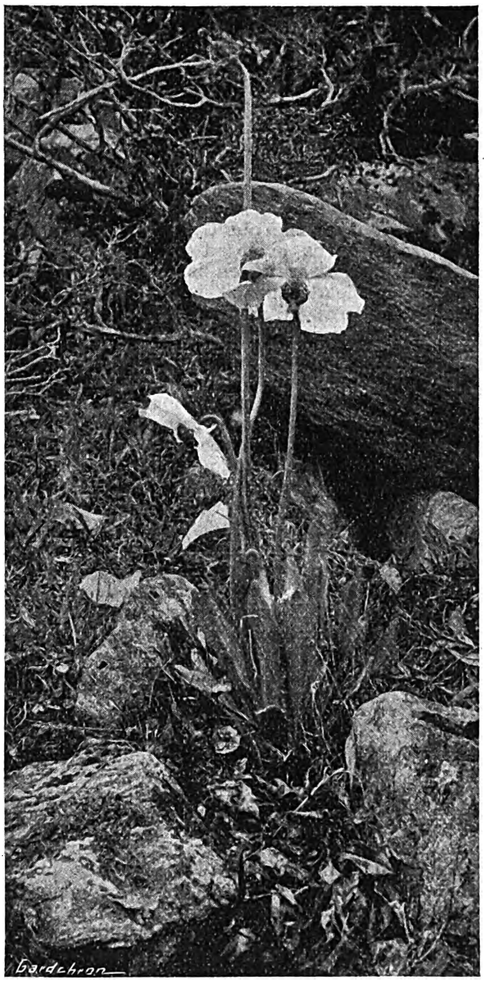

FIG. 30.—THE IVORY POPPY.
(see p. 71.)

> "In days of old here Ampthill's towers were seen,
> The mournful refuge of an injured Queen;
> Here flowed her pure but unavailing tears,
> Here blinded zeal sustained her sinking years.
> Yet freedom hence her radiant banner waved,
> And love avenged a realm by priests enslaved;
> From Catherine's wrongs a nation's bliss was spread,
> And Luther's light from Henry's lawless bed."

The celebrated third Lord Holland and Lady Holland lived here, the name of the latter, it will be remembered, being often associated with the introduction of the Dahlia to this country. Such famous political personages as Pitt and Fox sojourned here on various occasions, after having made their journey from London by the old stage coach.

The famous Lime Avenue, upwards of a quarter-of-a-mile long, has been declared to be one of the finest of its kind in England, rivalling Addison's famous walk at Oxford. At the lower end of this avenue stands the house, Georgian in structure, with thirty-two flower beds immediately in front, and Rose beds and lawns beyond. These beds are, probably, as originally designed, formal in outline and surrounded by the once much-prized Box edging. Sixteen of these beds are arranged on each side of a spacious gravelled area, a circular fountain bed occupying the centre. On the south side of the mansion are the permanent features of a flower garden, flowering shrubs, clumps of Pampas Grass, Paeonies, Torch Lilies, Anemones and Rheums, all in beds. Here, also, is a large herbaceous border of irregular outline, and this, by the way, has a fine background of Yew trees, which provides a good setting for most flowers and a great deal of protection from inclement weather. This border and other improvements were largely the creation of the late Emily, Lady Ampthill, who resided at Ampthill Park for upwards of forty years. Her Ladyship was aunt to the present Duke of Bedford, owner of the Ampthill Park estate.

Further along are the blue and yellow borders and further on again the pink and white section of the garden. The latter comprises a pergola clothed with pink and white rambling Roses, while a narrow bordering of the Madonna Lily fronts the entire length of the structure. On the opposite side of the path is a huge bed filled with rose-pink Pentstemons, a group or so of white Pentstemons, or the white-flowering Tobacco with some pink-flowered plants of the same family. The blue and yellow beds are filled with blue and yellow Irises on one side of the walk, while a semi-circular bed on the other side is planted with hardy blue Geraniums, blue Veronica, Spiderwort, Nepeta, Anchusa, the blue annual Pimpernel and Ageratum, with golden Privet at the back, and a group of St. John's Wort at one end. The special charm of all these beds and others is that they have been carved out of the surrounding woodland, and a visitor is unaware of their position until suddenly confronted by the flowers.

To this brief reference of cultivated plants I would add another word concerning the Primrose, which thrives so perfectly in the woodland. The ground occupied by these "early nurslings of the year" is probably not less than two acres. Here a drift, there a large colony, their crimpled leaves and pale yellow blossoms also spangle much of the rougher lawn and Ivy-covered woodland. No fairer sight can be imagined. As Wordsworth says:—

> "Long as there's a sun that sets
> Primroses will have their glory."

Primroses are among the most beautiful of our wild flowers, and no flower is better fitted for naturalising in the borderlands which come between the garden proper and the woodland or coppice. *C. T.*

CONTRACTS OVER THE VALUE OF £10.

In the case of contracts for the sale of goods where the value of the goods transferred exceeds £10, the special rules set out in the Sale of Goods Act of 1893 must be complied with. Before referring to these rules, however, it is necessary to discover when they will have to be applied; for after a short consideration of the subject two questions arise (*a*) what is a sale of goods, and (*b*) must each article be over £10 in value, or does the Act refer to a number of articles together making a total of £10?

According to the Act, a contract of sale of goods is a contract "whereby the seller transfers or agrees to transfer the property in goods to the buyer for a money consideration called the price." Thus, where one lot of goods is exchanged or "bartered" for some other goods, this is not a sale, and the Act does not apply; there must be a transfer of goods by one person to another for a sum of money.

It has been stated that the Act only applies where the contract is over the value of £10. Does this £10 mean the price of each separate article, or does it refer to all the articles sold? If the purchase price of one transaction is £10, then the Act will have to be complied with; thus, if twenty-five Rose trees were bought and the total price amounted to £10, this would come under the provisions of the Act, but if on the other hand, trees costing £8 only were originally purchased, and then later it was thought wise to buy some more, and trees costing £2 were ordered, neither of these sales would appear to be within the Act. Thus it is not each article which must be considered, but rather each transaction, and if this amounts to £10, then the special rules must be complied with.

Formalities of the Contract.

In order that a contract for the sale of goods of the value of £10 may be enforced, one of the following alternatives must have happened:—

(1) Acceptance and actual receipt of the goods;
(2) A payment in earnest;
(3) Part payment, *or*
(4) There must have been some note or memorandum in writing signed by the delinquent party.

Dealing with these in the above order: if one party accepts the goods he has agreed to buy, he will have to pay either the price agreed or else a reasonable price for them.

A payment in earnest—a very rare occurrence—is the payment of a sum of money to bind the bargain; what more often happens, however, is the third example, that is, part payment of the price; and where this has taken place the contract is considered binding.

The last example is the most important: some note or memorandum signed by the dilinquent party. It is most important that some memorandum signed by the other party should be obtained whenever a contract of £10 or upwards is made. It is not essential, however, that it should be signed on the making of the contract, for it is enough that it is in existence when it is desired to enforce the contract in a Court of Law. Even a letter which purports to repudiate the contract may be enough, if it recognises that a contract has been made. The note must, however, in the first place, be signed by the party to be charged, it must also show the names of the parties, the goods and the price. If no formal contract has been signed, sufficient evidence can often be gathered from a number of letters written in reference to the contract, these will be signed, they will be addressed to the other party (an envelope can be connected with a letter) and probably they will refer to the price and the goods in question. In view of this, it is always wise to save any letters and envelopes received in connection with transactions over £10, as these may well provide useful evidence for enforcing the contract. It is, however, wiser still to obtain a written note of the contract signed by the other party. *Harold Sharman.*

KENSINGTON GARDENS.

Kensington Gardens, nowadays, forms an appendage of Hyde Park, the two open spaces together constituting the largest area of its kind in the London district. The Palace at Kensington, together with some twenty-six acres of ground, originally belonged to the Earls of Nottingham and was known as Nottingham House. It was purchased from the Earl of Nottingham by William III, who laid out the grounds around it with the help of the famous Le Nôtre, but subsequently London and Wise were employed as garden architects, and when the additions to the gardens were made by Queen Anne, Wise alone was employed. The famous Orangery was erected by Wren in Queen Anne's time, and was originally used as a banqueting house; in the time when the frame ground existed, this beautiful building was used for the housing of barrows, tools, etc., of the gardeners.

The greatest additions to the place were made by George III and Queen Caroline, who employed Bridgeman to lay out three hundred acres which were enclosed by them, and it is probable that in those times the gardens included the part on which Kensington Palace Gardens are now built, for the total area of Kensington Gardens nowadays is only 274½ acres. Kensington Palace itself is historical from the fact that Queen Victoria was born there in 1819; she was very partial to the place, for much of her childhood was spent there. It is to Queen Victoria the public owe the privilege of having access to this beautiful open area; at first only "respectably dressed persons" were allowed to enter the gardens from sunrise to sunset, but after the Palace ceased to be a Royal residence, the gardens passed under the control of the Office of Works, and it now constitutes one of our most famous public parks.

Those who knew Kensington Gardens some thirty years ago would scarcely recognise the part in the vicinity of the Palace as it now appears, for the old houses and pits, which were used for the propagation and growing of the various bedding subjects and the housing of Palms, etc., used out-of-doors in Hyde Park during the summer, were accommodated in what was known as the Frame Ground, the site of which is now occupied by a sunken garden, and the part in front of the old Orangery is laid out with wide lawns enclosed by an embattled Privet hedge, near which is a row of scarlet Thorns, while down the broad walk in the centre are some grand Bay trees, alternated with fine Hollies.

The Dutch garden occupies about half-an-acre of ground with a large rectangular pool in the centre. The pool is approached by flights of steps leading past three broad terraces in which numerous flower beds are planted with a variety of subjects, no fewer than twenty thousand bedding plants being utilised at the present time. The whole of this sunken garden is a blaze of bright colour, and we were informed that flowers are in bloom there for eleven months out of the twelve, for it is a very favoured spot. Most of the beds are massed with one kind of plant; the subjects employed include Delphiniums, Sidalceas, Erigerons, Arctotis grandis, Verbena venosa, Scabious, Balsams, Heliotropes, Violas, Dahlias, Gladioli, Chrysanthemum maximum laciniatum, Petunias, Pansies, Antirrhinums, Pentstemons, double Shirley Poppies, Viscaria cardinalis and Cheiranthus Allionii.

Along the margins of the pool are placed tubs containing dwarf Dahlias, and on the short columns by the stone steps are tubs of Agapanthus in bloom. Many beautiful Nymphaeas are planted in the water, and not the least interesting of the features are the old leaden cisterns in the water, some of which date from 1600. The whole of the sunken garden is enclosed by a pleached alley of red-twigged Limes, and at every few yards an opening has been made in the alley to permit of a view of the interior of the garden.

This year, Mr. Hay has added further to the amenities of this beautiful part of Kensington Gardens by planting a long border with Sweet Peas on the east side of the sunk garden, a supplementary illustration of which was given in *Gard. Chron.*, October 16, 1909, just after it was completed.

The sunk garden is a comparatively modern feature, but the flower walk in Kensington Gardens has existed for a long number of years, and here again the improvements have been so great in the past few years that those who have not visited it for a decade or two would be agreeably surprised at the change. The flower walk consists of a broad path with borders on either side extending to five hundred yards with a most beautiful setting of trees and shrubs in the background. The trees include fair specimens of Cotoneaster frigida, Crataegus coccinea, Gymnocladus canadensis, Liriodendron tulipifera, Quercus Suber, the Cork Oak; Ailanthus glandulosus and Aesculus hybrida.

Probably because the flower walk was so beautifully natural, former superintendents did not attempt a great deal in the way of flowering plants; indeed, we remember the time when it received only the odds and ends of the bedding plants after Hyde Park and other places in association with it had been satisfied, but Mr. T. Hay, the present Superintendent, realised the great possibility of making this one of the most beautiful features in any of the London parks, and has transformed it into a fairy place, quite altering the original style and bringing into greater prominence some of the more notable trees by removing the undergrowth of commoner shrubs, laying down turf at appropriate spots and making numbers of flower beds at points of vantage. A fine old Weeping Ash, for instance, which was formerly half hidden by Privets and Laurels has been relieved of its undergrowth so as to be seen in its full beauty, and in front of it a border of Coltness Gem Dahlias has been planted.

All along the border are great masses of such plants as Shasta Daisies in several fine varieties; the beautiful scarlet Carnation King Arthur; Lychnis (Agrostemma) Coronaria, Aconitum Napellus (pyramidale) in association with Marguerites; Coreopsis grandiflora, Veronica longifolia subsessilis, Sweet Williams, Heliotropes, Dianthus Crimson Bedder, Trachymene coerulea in association with Marigold Legion of Honour, and a fine strain of Primula pulverulenta, which is just passing over.

A special feature of interest in this flower walk is a bed planted with a variety of plants, some of which have never flowered before in England. They were gathered together by Mr. Hay from various sources, and as each plant is labelled with the country of origin, the cosmopolitan character of the bed has earned for it the name "The League of Nations" by the public. We can only enumerate a few of the more interesting of the plants in this unique bed, which is not of a very large size. They are Sabbatia campestris, which was illustrated in *Gard. Chron.*, August 7, 1926, and received the R.H.S. Award of Merit on Tuesday last; Meconopsis Wallichii, M. Baileyi, Lisianthus (Eustoma) Russellianus, Dahlia Merckii, a species from Mexico, which is exceedingly beautiful when in flower; Linaria triornithophora, Anthemis Sancti-Johannis (figured in *Gard. Chron.*, October 2, 1926); Hibiscus diversifolius, Primula effusa, a dainty little species somewhat like P. malacoides; P. Florindae, which seems to do remarkably well in the smoke-laden atmosphere of these gardens; Lupinus rivularis (cytisoides), Cineraria Moorei, C. lobata, a dwarf, yellow-flowered species; Commelina coelestis and Rosa Roulettii, the last not more than three inches high, and bearing several tiny pink blossoms.

Other rare and interesting plants included are of a garden nature, amongst them a very fine Sphaeralcea named Hascombe Bronze; a number of interesting varieties of Mimulus, including Giant Bronze, the large flowers of which are beautifully blotched with crimson on a yellow ground and with orange coloured upper petals; Agrostemma Abbotswood Rose, a glorious variety of this beautiful old plant; Salvia Sclarea, Vatican variety; a variegated leaved form of Gazania splendens, and Calceolaria L. B. Stewart, a most glorious Calceolaria with deep orange flowers marked with darker spots.

APPLE AND PEAR SCAB.

(Venturia inaequalis and V. pirina.)

Apples and Pears are subject to many diseases, but in all probability Scab does more damage than that caused by all the rest put together. There is no doubt that the incidence of scab is, to a large extent, seasonable. In gardens where control measures are not carried out every year a certain number of Apples and Pears are mis-shapened, cracked, or badly marked in some other way; in other years, the majority of the crop is so marked.

When control measures are undertaken against Apple and Pear scab it is done with a view to reducing the fungus to such an extent that the majority of the fruits are free from injury. If these control measures are properly carried out there is no doubt that this object can be attained, but to those who are attempting to fight Apple and Pear scab for the first time, it would be as well to point out that the two organisms concerned are extremely good fighters, and if the attacker is to be successful he must use all his weapons, at the right time and in the right way.

My object in writing this note is not to give the full control measures for fighting these diseases, but rather to remind those whose Apples and Pears are missing a crop this year that it is a good opportunity for adopting spraying operations to control Apple and Pear scab without any damage to the crop. With some spray fluids, a certain amount of fruit-dropping in June has been recorded, so that, especially with Apples, there is always a risk of some loss of crop following spraying. When the trees are carrying no crop it is at least a good spraying opportunity.

Two fungicides are in common use against Apple and Pear scab, namely Bordeaux mixture and lime-sulphur. It is claimed that the former is a much better control for scab than is lime-sulphur. It seems to me that if only a small quantity of spray fluid is required it is best to use lime sulphur, because it may be purchased in concentrated form, and only requires the addition of water to be ready for use; when large quantities of spray fluid are required it is cheaper and more efficient to use Bordeaux mixture.

Spraying carried out now will do much to reduce Apple and Pear scab infection on the leaves and young wood of these trees. I would remind those who are spraying Pears that the fungus concerned mainly attacks the under-side of the foliage, so that it is necessary to try and coat the underside of the leaves with the spray fluid used. With wall Pears, however, this is not easily done. *Somerset.*

NOTICES OF BOOKS.

Pictures of English Gardens.

The book published recently by Country Life* cannot fail to delight all who are interested in the creation and improvement of gardens. It is a beautiful picture book, and—which is not always the same thing—a book of beautiful pictures. Every illustration in the 192 quarto pages depicts some charming garden scene, and all are finely reproduced from first-rate photographs. But this book is not mainly a collection of garden pictures from all parts of England; it is an instructive book inasmuch as the pictures show how certain sites may be beautified by flowers, shrubs and trees, and will prove suggestive to those who have somewhat similar positions to beautify, but do not possess creative genus in a marked degree, nor the wisdom that comes from long experience of gardens and garden plants.

There is an introduction by Mr. E. H. M. Cox, in which he refers to the wide-spread love of gardening and its development in the British Isles; discusses various types and sizes of gardens from the "small plot to anything over two acres"; and has something to say about types of gardeners. Then follow a few hints in regard to lay-out, exposure, shelter, soil, rainfall and surroundings. In conclusion, the author states eight general rules in regard to the upkeep of a garden; of these we quote two: "Do not be too proud to learn from the successes and failures of others. The more experienced a gardener is, the more he realises how much he can learn from others." "Above all, be generous in your gardening. It is the most popular hobby in the world, and this popularity has arisen from the common bond, a love of plants, that all real gardeners have."

Plants and plant-grouping are not dealt with, but there is a useful index to the plants and scenes depicted, and the illustrations tell their own story—and a very beautiful story it is The Flower Borders (pp. 7, 61 and 66), Foxgloves (p. 141), Cedars (176), Polyanthuses (p. 136), Crocuses (p. 130), Topiary and Tulips (p. 117), Rose Garden (p. 108), Alpine Garden (p. 84), Wall Garden and Pergola (p. 57), Garden Gate and Steps (p. 46), Pergola and Lilies (p. 39), Water Garden (p. 30), Old-fashioned Garden (p. 9), Formal Garden (p. 28), and the Terrace Garden (p. 1), are among the most pleasing pictures in a very fine set.

VEGETABLE GARDEN.

LATE CARROTS.

To obtain supplies of young, tender roots for use in the autumn, seeds of Short Horn Carrots or of the intermediate varieties should be sown forthwith. It is not necessary to choose rich soil for Carrots; the ground should be dug deeply previous to sowing the seeds, and afterwards trodden fairly firmly.

So soon as the seedlings are large enough to handle, thin them sparingly, for young Carrots are much appreciated in autumn, and may be drawn out of the rows for use when small.

TURNIPS.

Make a sowing of the following varieties: Early Six Weeks, Green Top White and Red Globe. The roots will grow to a useful size by September and onwards. If other ground is not available, sow them where the early Potatos have been lifted. Make several sowings up to the second week in August, according to the amount of ground available. Thin the seedlings sparingly as advised for Carrots; the roots are most useful when grown to the size of tennis balls.

CABBAGES.

There are many varieties of Cabbage that turn in very quickly, such as Harbinger, Favourite, Little Gem and Sutton's Earliest.

Cabbages should be grown on fairly rich soil that has been manured and dug deeply. The plants will grow very quickly and make nice, tender heads by the autumn.

SALADS FOR LATE USE.

Lettuce seed may be sown about every ten days or a fortnight, choosing such varieties as Nonsuch and Little Gem. The plants will form nice, compact heads in much less time than the white Cos sorts. A sowing may be made of the latter at the same time to extend the season. There are many sorts of Cabbage Lettuces, but I have not found any variety better than All the Year Round for a late supply; Stanstead Park does not form such good heads.

As shorter days approach, all Lettuces should be planted on borders or in cold frames, where they may be protected from early autumn frosts and very heavy rains.

The soil for this crop needs to be well enriched with short stable manure and dug deeply previous to planting the young Lettuces, which should be given plenty of water in hot, dry weather in their early stages.

Continue to sow seeds of the most favoured sorts of Radishes; these again should be grown quickly to be tender.

Continue to sow Endive; the round-leaf variety is better for late use than the curled sort, as the latter is subject to damping. Endive should be planted on borders where protection can be given from frost and damp; if available, place cold frames over the plants so that the light can be placed in position when the weather is unfavourable. These plants, like Lettuces, require to be grown quickly in suitable soil, to produce good hearts. A little Onion seed may be sown in the open to obtain salad material in the autumn. They may be grown in any ordinary ground. *E. Neal, Tilgate Gardens, Crawley.*

HOME CORRESPONDENCE.

Lime and Soot as a Deterrent to Birds.—In his notes on lime and soot in the garden (p. 450, Vol, LXXXI), Mr. Saunders advises a mixture of lime and soot as a dressing for small seedlings. I do not find it necessary to wait until the ammonia fumes go off before applying it, for I have always regarded the fumes as the principal deterrent to attacks of birds on small seeds. I apply it so soon as mixed and have never seen the least harm done to seedlings, although I have used it on almost everything for many years. It is the only thing that will prevent the Turnip flea from clearing off young seedlings in dry weather. I use old soot and air-slaked lime, but if both are absolutely dry, the ammonia fumes do not rise very readily; in that case I mix a handful of moist earth with the soot before adding the lime. Three handfuls of lime is sufficient to release the ammonia in a bucketful of soot. *Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham, Surrey.*

Lorette System of Pruning.—Some time ago, a correspondent enquired in your paper if any one had tried the Lorette system of pruning. I have tried it for two seasons with Apples and Pears, and find it fulfils all that is claimed for it. The system of "snicking" the bark to produce growth in a dormant bud has answered invariably. I have not taken much trouble as yet about Plums so prefer to say nothing about them. I have not tried the system at all with Nectarines and Peaches. I find in this part of England the pruning should be carried out a fortnight to three weeks later than stated in Lorette's book. With old trees, the new pruning should be spread over a term of three years. Trees, three years' old, that have been directly pruned on the Lorette system have done best. There is a vast difference noticeable in a tree partially pruned on the old and partially on the new system. It would be interesting to hear the opinions of other correspondents. *H. Impey, Felsted, Essex.*

PUBLIC PARKS AND GARDENS.

The Kesteven County Council has granted permission to the Metheringham Parish Council to borrow £200 for purchasing, fencing and improving a recreation ground.

Kidderminster Town Council has accepted the gift of the directors of Messrs. Brintons, Ltd., carpet manufacturers, of a park and recreation ground for the town.

The Town Council of Dundee has agreed to purchase certain land at a cost of £475 for a recreation ground, and the Parks Committee has been requested to prepare plans and an estimate for laying out the land.

An instance of the urgent need of playing fields in industrial areas comes from Salford, whose Town Council has applied to the Ministry of Health for a loan of £28,076 to acquire eighty-seven acres of land as playing fields at Lower Terrel. The Playing Fields Association has taken a keen interest in this scheme, and representatives of the Lancashire branch were present at the public enquiry held by the Ministry of Health.

A scheme is afoot at Newport, Monmouthshire, for the purchase of Lord Tredegar's deer park, which is 170 acres in extent, for use as a recreation ground.

Romford Urban District Council has received the sanction of the Ministry of Health to borrow £4,782 for the acquisition of lands in the Collier Row Ward, for a recreation ground.

The Town Council of Sheffield has been presented with about five-and-a-half acres of woodland for the extension of Endcliffe Park.

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*The Modern English Garden. Country Life, Ltd., London. Price 21/- net.

SOCIETIES.

NATIONAL ROSE.

July 15.—The special show of new Roses, which was arranged by the above Society, and held at the R.H.S. Hall, Westminster, on this date, fully achieved its purpose, for there were nearly one hundred new seedling Roses on view. The majority, which were shown for the first time, were entered in competition for the *Daily Mail* Gold Cup as well as for the Society's medal awards. It will be remembered that the Cup was first offered last year, and that the judges did not consider any variety then shown to be worthy of the award. The principal conditions of the competition were that the Cup was offered to the raiser of the "best, new scented, seedling Rose, which may be of any class but must have perfume." After a prolonged inspection of the many varieties, the judges awarded the cup to Messrs. W. E. B. Archer and Daughter for their dark, velvety crimson seedling, which was said to have been raised from Chateau de Clos Vougeot and K. of K. The judges awarded four Gold Medals and Certificates of Merit.

Gold Medals.

Daily Mail Scented Rose (Fig. 25)—As stated above, the parents of this variety were said to be Chateau de Clos Vougeot and K. of K. In general appearance, the new seedling H.T. seemed to us very like Etoile d'Hollande, but not so fragrant as that variety. It is of medium size, globular in shape, and the broad, velvety-crimson petals are flushed with maroon. Shown by Messrs. W. E. B. Archer and Daughter.

Flamingo.—This is a glowing cerise H.T. variety, much the type of Lady Inchiquin. It is of beautiful shape and colouring in the bud stage, but when fully expanded the flowers are usually formless and of a dull rose colour. It is sweetly scented. Shown by Messrs. Alex. Dickson and Sons.

Fortuna.—A hybrid Musk Rose of considerable fragrance. It appears to be a very free-flowering variety of dwarf habit and has good foliage. The buds are of deep cardinal red colour. The round, single flowers are about four inches across, and when first opened, are of bright rose-pink colour. It is an attractive garden Rose. Shown by Mr. J. H. Pemberton.

Margaret Anne Baxter.—This was the best new seedling in the hall. It is a fully double H.T. variety, the flowers are of perfect shape in all stages, and they are poised well on long, clean stems. It is pleasantly scented and the pure white of the outer petals is relieved by a suggestion of flesh-pink in the heart of the bloom. It is an all purposes variety, and the plant, which accompanied the flowers, indicated a sound constitution and a good habit. Shown by Messrs. T. Smith and Son.

Certificates of Merit.

Frank Reader.—This excellent, fully double H.T. Rose received the R.H.S. Award of Merit on July 13 last year. The large flowers are of creamy yellow colour, deeper at the base of the petals and flushed with apricot in the heart of the blooms. It has a pleasant fragrance. Shown by Messrs. D. Prior and Sons.

George Howarth.—We admired this glowing scarlet H.T. Rose at the Society's autumn show last year. It is of medium size, free-flowering, and the substantial petals have a golden base and a suffusion of rose-pink. Shown by Messrs. Bees, Ltd.

Lady Leslie.—A rosy-cerise H.T. variety, fully double and of good form, but the outer petals have a suggestion of magenta as the flowers mature. Usually there is a short vertical line of gold at the middle of the margin of each petal. Shown by Messrs. S. McGredy and Son.

Portadown Crimson.—We were of the opinion that this was the best of the new Roses in competition for the Cup. It is a deliciously fragrant H.T. variety of rich crimson colouring, heavily flushed with maroon. Shown by Messrs. S. McGredy and Son.

Other New Roses.

No. 25, shown by Messrs. B. R. Cant and Sons, is a good H.T. variety of goblet shape. The broad petals are freely stippled with pink, and the flowers are fragrant. No. 37, shown by Mr. J. H. Pemberton, is a hybrid Musk Rose which bears plentiful clusters of double, flattish flowers, measuring three inches across, of medium pink colour and most refreshing fragrance; No. 38, a good, pale lemon coloured H.T. Rose, was shown by Messrs. Alex. Dickson and Sons; No. 49 a brilliant H.T. variety, shown by Messrs. S. McGredy and Son, is at its best in the bud stage, but would be a showy garden variety. No. 58 is a rounded H.T. variety of compact form and refreshing fragrance. It is of flesh pink colour, becoming deeper in the centre, and was shown by Messrs. G. Longley and Sons. There were several enormous H.T. varieties of solid, Cabbage-like appearance, which would only appeal to lovers of mere size.

Several varieties were entered in competition for the Clay Challenge Vase, offered for the best new scented, non-climbing Rose of the year. The final award will be made at the Autumn show.

Competitive Classes.

The trade groups of Roses arranged on separate tables in the middle of the hall made a most effective display. The first prize was won by Messrs. Alex. Dickson and Sons, with a charming arrangement. They had baskets of Betty Uprichard, Lady Inchiquin and Sunstar, while the corner pillars were composed of good blooms of Lady Worthington, Mrs. Henry Morse and Lady Helen Maglona. In the centre there was a handsome stand of Margaret Dickson Hamill. The whole of the many blooms were of excellent quality, and the finish of the exhibit was admirable.

Messrs. B. R. Cant and Sons were a good second in this attractive class. They had a generous centre of glowing blooms of Betty Uprichard and pillars of Madame Butterfly, Los Angeles, Mrs. Henry Morse and Margaret Dickson Hamill. Their other varieties included Shot Silk, Lord Charlemont and Mrs. George Norwood, of very good quality. Mr. Elisha J. Hicks was third, and he had splendid blooms of Lady Inchiquin, Mabel Morse, Mrs. Henry Stevens and Betty Uprichard; Mr. J. H. Pemberton was fourth, and an attractive display was also arranged by Messrs Dowtry's Rosery.

There were no fewer than eleven groups of cut Roses arranged on tabling set against the walls of the hall, and these were all of considerable excellence. Messrs. Chaplin Bros. were first with generously filled baskets of Emma Wright and Mrs. Henry Bowles, pillars of Lady Inchiquin and Mrs. Henry Bowles, and a lovely centre of Etoile d'Hollande.

Mr. George Prince was a good second, and he staged K. of K., Hortulanus Budde, Angele Pernet, I. Zingari, Mrs. Henry Morse and Lady Roundway in splendid condition. The third prize was awarded to Messrs. R. Harkness and Co., who had arches of K. of K., Mabel Morse, and Mrs. Henry Morse. Mr. Ernest Hicks, who was fourth, staged good blooms of Lady Inchiquin, Padre, Golden Emblem and Frau Karl Druschki.

The twenty-four exhibition blooms which won the first prize for Messrs. Frank Cant and Co. was an excellent exhibit composed of fresh shapely blooms of good size and colour, and showing surprisingly few signs of the recent inclement weather. The principal varieties were Mrs. G. Marriott, Mildred Grant, Mrs. G. Norwood, Courage, Gladys Holland and George Dickson. Messrs. D. Prior and Son were second, and they had good specimens of J. G. Glassford, Marcia Stanhope, Augustus Hartmann and George Dickson.

The amateurs also staged admirable Roses. Although there were only two exhibits of twelve exhibition varieties they were of great merit. W. E. Moore, Esq., Ickenham, was first with fresh and shapely examples of George Dickson, Red Star, Mrs. Henry Bowles, Mrs. C. Lamplough and other good sorts. In his second prize collection, H. Robins, Esq., Margretting, had fine blooms of Mrs. Herbert Nash, Frau Karl Druschki and Lady Inchiquin. L. P. Roberts, Esq., was an easy first with six distinct exhibition varieties, and he included George Dickson, Mr. George Lamplough and Madame Jules Gravereaux of great merit. The Roses shown in vases also made a good display. H. Robins, Esq., won a first prize with beautiful vases of Arthur Cook, Lady Helen Maglona and Los Angeles. W. E. Moore, Esq., was a good second and he showed Betty Uprichard, Marcia Stanhope and Shot Silk in his collection.

The artistic classes were well contested. In the open classes, Messrs. Chaplin Bros. were first, and Mr. George Prince was second with well arranged bowls of mixed Roses. In the amateurs' class there were six exhibits of bowls of mixed Roses, and the best was arranged by Mrs. Oakley-Fisher, Sudbury, Middlesex, while Miss E. Griffith, Finchley, was a good second.

WOLVERHAMPTON FLORAL FETE.

(*Concluded from p.* 57.)

The following awards were made to non-competitive and other displays at Wolverhampton on July 12:—

Challenge Cup, for the best non-competitive exhibit, to Messrs. James Carter and Co., Raynes Park.

Silver Cup, for best display of hardy flowers, to Messrs. Bees, Ltd., Liverpool.

Blackmore and Langdon Cup, for Begonias, to Major S. J. Thompson, Codsall.

Large Gold Medals—To Messrs. James Carter and Co.; to Messrs. Webb and Sons, Stourbridge, for vegetables, fruits and flowers; to Messrs. Bakers, Ltd., Wolverhampton, for formal and hardy flower garden.

Gold Medals.—To Messrs. W. H. Simpson and Son, Birmingham; to Messrs. Alex. Dickson and Son, Newtowards, Co. Down; to the Parks and Baths Committee of Wolverhampton and to Messrs. Bakers, Ltd.,

Silver-Gilt Medal.—To Messrs. John Forbes, Ltd., Hawick.

Silver Medals.—To Messrs. Hewitt and Co., Birmingham; to Messrs. Maxwell and Beale, Broadstone; to Messrs. Bowell and Skarratt, Cheltenham; to Mr. H. N. Ellison, West Bromwich; to Messrs. Isaac House and Son, Bristol; to Mr. H. Woolman, Shirley, Birmingham; to Messrs. Jarman and Co., Chard; and to Messrs. Bakers, Ltd., Codsall.

ROYAL SHOW, NEWPORT.

The horticultural section of the Royal Agricultural Society's Show at Newport was again a great success. Owing to the unfavourable weather a few exhibitors were unable to compete, but two very large tents were well filled with exhibits of fine quality. The weather on the first day (July 5) could not have been worse, but even this did not deter a large number from visiting this popular show.

Groups of miscellaneous plants in and out of bloom were again excellent.

Messrs. Jas. Cypher and Sons, Cheltenham, won the first prize of £45 with an excellent and lightly arranged group. The second prize of £40 was won by Mr. W. A. Holmes, Chesterfield.

The first prize in the class for twenty-four bunches of Gladiolus primulinus was won by Messrs. Wm. Artindale and Son, Sheffield, the only exhibitors, with a good variety of well-grown flowers.

Messrs. Bees, Ltd., excelled in the class for a collection of Delphiniums in a space of 150 square feet with a very fine exhibit.

Messrs. Blackmore and Langdon were the only exhibitors in Class 4 and were awarded the first prize.

The best group of aquatic plants was shown by Messrs. Waterer, Sons and Crisp, and Messrs.

Bowell and Skarratt, Cheltenham, were second.

Four collections of hardy perennial plants and cut flowers were staged; Messrs. Bees won the first prize of £30 with a well finished and superb group of brilliant colouring; Messrs. Wm. Artindale and Son followed closely, and Messrs. M. Prichard and Sons were third.

The best representation of a border of hardy perennials, consisting entirely of growing plants staged on the ground was shown by Messrs. H. and W. Evans, Cardiff. Messrs. Wm. Artindale and Son were placed second.

Messrs. C. Engelmann, Ltd., excelled in the class for Carnations with fine quality flowers in great variety. The best border Carnations were exhibited by Mr. H. Lakeman, Thornton Heath.

Collections of cut Roses on a space twenty feet by five feet were fine, and included many good varieties of recent introduction. Messrs. Waterer, Sons and Crisp were placed first and Mr. W. Robinson second.

Trade exhibits were again a fine feature of the show.

Large Gold Medals were awarded to Messrs. Sutton and Sons, for Sweet Peas; to The King's Acre Nurseries, for fruit trees in pots; to Messrs. Alex. Dickson and Sons, for Roses; to Messrs. Allwood Bros., for Carnations; to Messrs. Edward Webb and Sons for a miscellaneous group; to Messrs. Blackmore and Langdon, for Delphiniums; and to Mr. H. Lakeman, for border Carnations.

Gold Medals were awarded to Studley Castle, for a collection of choice fruits; to Messrs. J. Carter and Co., for a collection of plants; to Mr. L. R. Russell, for stove and greenhouse plants; to Messrs. J. Peed and Son, for a collection of plants; to Messrs. R. and H. Cuthbert, for Hydrangeas; to Messrs. W. Treseder and Sons, for plants and cut flowers; and to Messrs. John Basham and Sons, for Roses and Cherries in pots.

Awards of Silver-gilt and Silver Medals were made to other trade exhibits.

ELSTREE AND DISTRICT.

July 16.—The annual summer exhibition of this well-known Society was again held in the beautiful grounds of Aldenham House, Elstree, Herts., by the kind permission of Lord Aldenham and the Hon. Vicary Gibbs, when the high quality of the exhibits of previous years was not only well maintained, but even surpassed.

The display of vegetables set up by the Hon. Vicary Gibbs (gr. Mr. Edwin Beckett) was on very similar lines to that seen at the recent Chelsea show. In the present instance, however, the display was infinitely superior to that fine effort, and probably the finest ever made from this well-known garden. There were about two hundred dishes in the display. Some of the more noteworthy kinds and varieties were Red Elephant, Early Market, Short Horn and Golden Ball Carrots; Early Midlothian and King Edward VII Potatos; All Heart Cabbage, Early Giant Pea, Round-leaved Lettuce, Forerunner Cauliflower, Green Leviathan Broad Bean, Selected White and Ideal Cucumbers, All Seasons and Epicure Vegetable Marrow. It was a really wonderful display and well merited the award of a Large Gold Medal, a Silver Cup for the gardener, and congratulations of the judges.

The chief class for Roses was for a table group of cut blooms, arranged to occupy a space twelve feet by four feet. Of the four competitors, all of whom showed in splendid form, Messrs. W. Chaplin Bros., Ltd., were awarded first prize, and well merited this distinction, winning outright the Challenge Cup, having won the first prize in this class for three years consecutively. It was one of the best exhibits ever staged by the well-known firm. All the best of the more recently introduced Roses were shown, and they were set up in a manner that left nothing to be desired. Messrs. R. Harkness and Co. were placed second, and Messrs. Frank Cant and Co., third, all showing grandly.

In the class for six vases of garden or decorative Roses, in six distinct varieties, there were five excellent exhibits. Leading honours were won by J. N. Hart, Esq. (Mr. A. J. Smith), Lochinver, Little Heath, Potters Bar, who showed good bunches of Blush Rambler, Excelsa, Lady Gay, Penelope, Madame Leon Pain and Ophelia. A capital exhibit secured second prize for H. R. Darlington, Esq. (gr. Mr. J. Coleman), Park House, Potters Bar, and with another good lot G. F. L. Cook, Esq. (gr. Mr. Elsworth), The Bell House, Hayes, Middlesex, was placed third.

For a dozen distinct Roses, there were four entrants. First prize was won by Mr. J. N. Hart, who now wins the Challenge Cup outright. He had choice, even blooms, and well deserved premier honours. His best blooms were of Capt. Kilbee Stuart, Mrs. Elisha Hicks, Edel, George Dickson, Lord Allenby, Bessie Chaplin, St. Helena, Dr. Petyt, Mrs. C. Lamplough and Mrs. R. D. McClure. Second prize was awarded to Mr. H. Spicer, Hitchin Hill, Hitchin, who had large, unfinished blooms, while an even lot of smaller flowers secured third prize for W. Martineau, Esq., The Chestnuts, Boxmoor (gr. Mr. C. Ball).

Table decorations are always interesting at this show. In one class for a table decoration of Roses, first prize was won by Miss R. J. Stevens, Cobden Hill, Radlett, who had a dainty arrangement of blush Roses, simply set up. Second prize was won by C. E. Gabain, Esq. (gr. Mr. J. A. Paice), Mill Hill, with Lady Gay, and third prize was won by Miss E. Harding, Round Bush, Aldenham, with Excelsa. In another class from which Roses were apparently excluded, first prize was awarded to a very pretty combination of pink Cornflowers, pale blue Scabious and Veronica spicata rosea, the winner being Mrs. G. Attenborough, High Cross, Aldenham. Another charming decoration secured second prize for Mrs. T. E. Eames, Elstree, who had a similar scheme of colours, using a pink Carnation, blue Scabious and a Heuchera. Third prize was awarded to Mrs. F. E. Tuttle, Bushey.

Sweet Peas are always shown well at Elstree. In the class for twelve bunches, distinct, a grand series secured first prize for G. S. Leggatt, Esq. (gr. Mr. E. J. Pratt), Harpenden, who staged Mammoth, Powerscourt, Charming, Orion, What Joy, Sybil Henshaw, Royal Mauve, Royal Sovereign, Jean Ireland, Olympia and Magnet, in splendid form. Second prize was secured by J. Walbrook, Esq., The Croft, Stanmore (gr. Mr. W. H. Holloway). For six vases, distinct, Mr. G. L. F. Cook was first with grand flowers, and with another good exhibit, H. Dunhill, Esq. (gr. Mr. B. Howard), Mount Lodge, Harpenden, was placed second.

There were large numbers of honorary exhibits which added materially to the beauty of the show. Gold Medals were awarded to J. Walbrook, Esq., for a large group of Fancy Pelargoniums; Messrs. W. Cutbush and Son, Ltd., Barnet, for Roses, herbaceous flowers and alpine plants; Mr. J. C. Allgrove, Langley, Slough, for a large collection of Gooseberries; and to Messrs. Wood and Ingram for Roses.

ROYAL SCOTTISH ARBORICULTURAL.

Aberdeen Branch.

A delightful and instructive afternoon was spent on Saturday, the 18th ult., by the members of this Branch, among the woods on the beautiful estate of Pitfour, Aberdeenshire. It is one of the saddest sights to-day in driving through the countryside to see so many fine old mansion houses and estates broken up and sold. The Pitfour estate is one of the latest to come under this fate. Messrs. John Bisset and Sons, Ltd., timber merchants, Aberdeen, have purchased the mansion house and the matured timber. The latter occupies an area of some 500 acres, consisting of Scots Fir, Spruce, Beech and various other kinds of hardwood trees. The stipulation of the bargain is that the ground must be cleared by five-and-a-half years from now, when it will be taken over by the Forestry Commission for the planting of commercial timber.

The visit was made on the invitation of Messrs. Bisset, and the party was met by Mr. John Bisset and his three sons, John, James and Reginald, who conducted the party. Much interest was evinced in the wonderful devices used for the expeditious clearance of the trees. Directly these are felled they are cut into lengths and conveyed by light railway to the saw-mills, where they are slabbed, edged and jointed. A visit was then made to the sawmills, the plant of which aroused considerable interest. The power fuel used is sawdust, and the ingenious manner in which this is drawn by suction from the saws to the boiler evoked much praise. At this point lunch was provided for the company. Then followed the quarterly meeting of the Branch. Mr. John Michie, M.V.O., the President of the Branch, occupied the chair. He made sympathetic reference to the loss sustained by Col. W. S. Fotheringham, Murthly Castle, Perthshire, a prominent member of the Society, in the death of his wife, and Mr. Charles S. France, Aberdeen, spoke of the recent death of Mr. James Ward, forester and land steward, Seafield Estates, Keith, a member of the Branch. It was agreed to send a message of sympathy to Mr. Ward's relatives. The Chairman intimated that Colonel Ogston, of Kildrummy, had invited the members to visit Kildrummy on September 17. Six new members were elected.

A visit was paid to the stone circle on the estate, which is believed to be a relic of the ancient Druids. A return was made to the mansion house of Pitfour, now, alas, being demolished, where the visitors were entertained to tea by Messrs. Bisset.

GUILDFORD AND DISTRICT GARDENERS'.

The fifth annual show of the Guildford and District Gardeners' Association took place in the beautiful and spacious grounds of Stoke Park on July 13, and was undoubtedly the best show that this young and virile Association has held. Not only was there a greatly increased number of entries, constituting a record of 1,440, but the general quality of the produce was highly satisfactory, Carnations, Roses, Sweet Peas, herbaceous perennials and vegetables of a high standard of excellence being staged. Table decorations were also a feature of the show and attracted a very large number of entries.

In the competitive classes, the Silver Cup for Carnations was won by Sir John Leigh with excellent flowers of Lady Inverforth, Winter Glow, Baroness de Brienen, Lord Lambourne, White Pearl and Triumph. The Mayoress's Silver Cup and National Sweet Pea Society's Silver Medal for Sweet Peas, was awarded to F. W. Franks, Esq., for flowers of outstanding merit; and the Silver Cup for Roses was won by W. Harvey, Esq., with a superb group of clean, well-grown flowers.

Exhibits in the non-competitive classes were extensive, and the Gold Medal of the Association was awarded to the Godalming Nursery Co., for a very fine and tastefully arranged collection of herbaceous perennials, foliage plants and Hydrangeas. A Gold Medal was also awarded to Messrs. Fogwills for a collection of vegetables comprising about 150 dishes of seasonable varieties shown in excellent condition. The Silver Medal of the Association was awarded to Messrs. Skelton and Kirby for a collection of herbaceous perennials and rock plants; to Messrs. Spooner and Sons for a group of foliage plants, flowers and floral designs; and to Messrs. Scott and Wickham for a group of Carnations.

The Silver-Gilt Medal presented by *The Gardeners' Chronicle* for the most meritorious exhibit entered not for competition, was won by Mrs. Farnham, The Heights, Witley, with an exceptionally fine and well-grown collection of Sweet Peas.

Other meritorious non-competitive exhibits included Caladiums, Gloxinias and Streptocarpus, from Messrs. J. Peed and Son; herbaceous perennials and Roses from Messrs. Jackman and Son; Sweet Peas from Messrs. Bide and Son; Hydrangeas and Roses from Messrs. William Cutbush and Son; Carnations from Messrs.

Allwood Bros; water garden and herbaceous plants from Mr. Howard; herbaceous perennials and Roses from The Chalk Hill Nurseries; herbaceous perennials, Roses and Dahlias from Messrs. J. Cheal and Son; Roses and Carnations from Mr. Denyer; and a group of foliage and flowering plants, including well flowered examples of Vanda coerulea and Phalaenopsis Rimestadiana from J. J. Joicey, Esq.

ROYAL HORTICULTURAL.

July 19.—Although there were several distinct shows held at the R.H.S. Hall, Westminster, on this date, there were still empty spaces. The R.H.S. had a special competitive show of Cherries and soft fruits. Gooseberries were the principal feature, and Mr. J. C. Allgrove was awarded a Gold Medal for a splendid collection of this fruit, which he showed as fruiting bushes in pots and as gathered fruits. The National Carnation and Picotee Society held its annual show in conjunction with the meeting and the London and South of England Viola and Pansy Society held their first annual show. Orchids were fewer than usual, but seasonable hardy flowers were freely shown. Section B. of the Floral Committee made a large number of awards, chiefly to old flowering shrubs.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Stuart Low, Mr. T. Armstrong, Mr. J. Cowan, Mr. A. McBean, Mr. Charles H. Curtis, Mr. H. G. Alexander, Mr. A. Dye, Mr. E. A. Ashton, Mr. J. Wilson Potter, Mr. Fred. J. Hanbury and Mr. C. J. Lucas.

The Orchid Committee had little work to do as few individual plants and only one group were exhibited.

Award of Merit.

Disa Italia var. Pink Domino.—A beautiful Disa derived from D. Blackii crossed with D. grandiflora. It was described in our issue of July 2, when it was the best new garden plant exhibited at the Amateur Show. The plant is of fine, sturdy habit, having spikes a yard high and carrying four or five large pink and rose-pink flowers. On June 8, 1918, Messrs. Black and Flory exhibited Disa Italia derived from the same parents but, apparently, the reverse cross, therefore Pink Domino becomes a variety of Italia. The hybrid is interesting seeing that D. Blackii is derived from D. grandiflora and D. Luna, and D. Luna is the result of crossing of D. racemosa and D. Veitchii. Pink Domino is figured on p. 67, and was shown on Tuesday last by Col. Stephenson Clarke (gr. Mr. Conn), Borde Hill, Sussex.

Other Exhibits.

The only group of Orchids on this occasion was a bright and pleasing exhibit from Messrs. Charlesworth and Co., Haywards Heath. This firm displayed fine examples of Miltonia Lycaena, M. Greta (Charlesworthii × William Pitt), M. Blushing Bride, M. Princess Mary, Odontoglossum Ascania var. leucoglossa, O. Sterlina, O. eximium xanthotes, Cattleya Warscewiczii var. Mrs. Ashworth, with white flowers; Cypripedium Massianum, C. Alma Gavaert (Lawrencianum Hyeanum × Maudiae), the bright-flowered Odontioda Mauveen, and the rich purple Sophro-Laelio-Cattleya Adonis; the last-named derived from S.-L.-C. Anzac and Cattleya Warneri Ardenholme var.

Messrs. H. G. Alexander showed fine plants and flowers of Laelio-Cattleya Lustrissima superba and Cattleya Hesperus, the latter having a handsome purple and gold lip.

Floral Committee.

Present: Section A.—Mr. J. F. McLeod (in the chair), Mr. Arthur Turner, Lady Beatrix Stanley, Mrs. Helen Lindsay Smith, Mr. Wm. Howe, Mr. D. Ingamells, Mr. M. C. Allwood, Mr. A. E. Vasey, Mr. E. R. Janes, Mr. James B. Riding, Mr. R. Findlay, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. Charles E. Pearson, Mr. G. W. Leak and Mr. W. D. Cartwright, Secretary.

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. W. G. Baker, Mr. W. J. Bean, Mr. Charles T. Musgrave, Mr. James Hudson, Mr. G. Reuthe, Mr. E. H. Wilding, Mr. Reginald Cory, Mr. E. A. Bowles, Mr. A. Bedford, Mr. L. R. Russell, Mr. T. Hay, Mr. C. Williams, Mr. F. G. Preston, Sir William Lawrence, Bt., Mr. R. C. Notcutt, Mr. C. J. Lucas, Mr. Amos Perry, Mr. G. Yeld, the Hon. Henry McLaren and Mr. N. K. Gould, Secretary.

First Class Certificate.

Clethra Delavayi.—This is an exceedingly handsome species of robust habit. The stems of the young shoots and the flower stalks are red. The broadly lanceolate leaves are undulated on their upper surfaces, dark green above and glaucous beneath. The round, white flowers, which are large for the genus, are densely set on terminal racemes, which are fully six inches in length. Shown by Gerald W. E. Loder, Esq., Wakehurst Place, Ardingley, Sussex.

Awards of Merit.

Carmichelia Australis.—A half-hardy shrub which was introduced from New Zealand over a hundred years ago. Exceedingly well-flowered branches were shown, and these bore quantities of the small lilac-coloured flowers in simple racemes. Shown by Gerald W. E. Loder, Esq.

Feijoa Sellowiana.—A well fruited branch of this Brazilian shrub was shown. The illustration in *The Gardeners' Chronicle* of December 24, 1898, depicts the flowers and fruit. It is a Myrtaceous shrub, with thick, leathery leaves, and the fleshy petals are fawn-coloured without and purplish-crimson within. As the flowers expand, the petals fold back, disclosing their bright colour and handsome clusters of stamens. Shown by Ingram Whitaker, Esq., Pylewell Park, Lymington.

Gaultheria ? Farrer 1,191.—There appears to be some doubt as to the genus of this uncommon little evergreen shrub. It is of spreading habit, and the wiry shoots are furnished with small, ovate, alternate leaves which are lightly toothed, shining green above and sage-green below. The solitary flowers, which are produced in the axils of the leaves, have the superficial appearance of blue berries, not unlike the fruits of a Pernettya. The fleshy, blue calyx encloses the relatively small, green calyx and organs. Shown by Lionel de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Southampton.

Hymenocallis speciosa.—This very old stove liliaceous plant was introduced from the West Indies in 1759, and formerly was largely grown in our glasshouses. It is illustrated in tab. 1,453 of the *Bot. Mag.* as Pancratium speciosum. Two large scapes of pure white fragrant flowers were shown by Sir William Lawrence, Bt., Burford, Dorking.

Lobelia Tupa.—This vigorous, half-hardy perennial was introduced from Chili in 1824. A good illustration of a flower spike and leaf appears in *Bot. Mag.*, tab. 2,550, and its habit is well portrayed in the illustration which appeared in *The Gardeners' Chronicle* of September 28, 1912. Under generous treatment, the plant becomes seven or eight or even more feet in height, and bears large, ovate, downy leaves and robust spikes of reddish flowers. Shown by Gerald W. E. Loder, Esq.

Lomatia ferruginea.—Plants of this Chilian evergreen shrub are frequently shown in collections at the R.H.S. meetings. It was introduced in 1851. *The Gardeners' Chronicle* of September 28, 1907, contains illustrations which include interesting drawings of the details of the flowers. On the present specimens the flowers are less hidden by the foliage than usual. The short racemes have curiously formed flowers which are buff-coloured on the outsides and bright scarlet within. Shown by H. Armytage Moore, Esq., Knowallane, Saintfield, Co. Down.

Maranta Porteana variegata.—The chief beauty of this tropical, herbaceous perennial lies in the rich purplish colouring on the undersides of the variegated leaves. It is a sport from M. Porteana. Shown by Messrs. L. R. Russell, Ltd.

Mitraria coccinea.—This is quite a common shrub in the gardens of the warmer parts of the country. In one Cornish garden we have seen it grown as a hedge, and it was exceedingly beautiful when in flower. So long ago as 1849, Messrs. Robert Veitch and Son, of Exeter, caused a mild sensation by exhibiting a plant before the Chiswick Horticultural Society. The leaves are small, of delicate green colour, and the bright scarlet, tubular flowers have long stalks. It is illustrated in *Bot. Mag.*, tab. 4,462. Shown by Gerald W. E. Loder, Esq.

Sabbatia campestris.—This hardy annual was introduced from North America in 1855. The illustration in *Bot. Mag.*, tab. 5,015, gives a good impression of the flowers and habits of the plant, but Mr. Hay's flowers are of a distinctly brighter shade of pink, and the yellow zone is clearer. It appears to be a comparatively rare plant even in its native Arkansas, and the Red River, where it inhabits the open prairies, spangling them with its star-shaped flowers. It was illustrated in *Gard. Chron.*, August 7, 1926. Shown by Mr. T. Hay.

Tecoma jasminoides ?—The award is subject to verification of name. The plant shown does not agree with Bailey's description of Tecoma jasminoides in the *Queensland Flora*, where he states that the flowers are white, streaked with red in the throat, whereas those shown were stippled with pink and had hairy crimson throats. It had more the appearance of a Thunbergia than a Tecoma. Shown by Lt.-Col. Messel, Nymans, Haywards Heath.

Groups.

On a considerable floor space, Mr. H. J. Jones set out an admirable collection of herbaceous Phlox. His chief varieties were Mrs. Scholton, bright salmon; Mrs. Askew, deep salmon; Asia, lilac, with a carmine eye; F. A. Buckner, white; E. Campbell, pink with a paler centre; Imperator, crimson, and Royal Purple. Messrs. B. Ladhams, Ltd., included Phloxes with Coreopsis, Gaillardias, Hydrangeas and Lavateras in a large exhibit of hardy flowers.

An interesting exhibit of Poppies was made by Messrs. Sutton and Sons. Amongst the vigorous double-flowered varieties they showed Cardinal, Pink Gem and Salmon Pink. The Shirley Poppies were represented by good colours, and there were also several showy varieties of Eschscholtzias. Messrs. Bakers, Ltd. staged Delphiniums, Lychnis viscaria fl. pl., and Lupins.

In the corner of the Orchid Annexe, Mr. H. Hemsley had a good collection of his hybrid Sidalceas. Mr. Rich showed Phloxes Le Mahdi, Madame Scholer and H. T. Leiter, with Gaillardias and other border flowers. Mr. F. G. Wood had a well-arranged exhibit in which he displayed Primulas, Funkias, Astilbes, and shrubby Veronicas.

An extensive collection set up by Messrs. Waterer, Sons and Crisp included several Liliums, herbaceous Phlox, Monardas, Primula Florindae and many alpines. A goodly batch of Linaria Canon J. Went, a graceful blush pink variety, was shown by Messrs. Bowell and Skarratt. Mr. G. Reuthe had his customary exhibit of uncommon shrubs and alpines and included Lonicera Hildebrandtii, Lilium dalmaticum and various alpines.

Messrs. Robert Veitch and Son contributed many interesting shrubs, such as Romneya tricocalyx, R. hybrida, Lonicera Hildebrandtii, the woolly-leaved form of Plagianthus Lyallii and Escallonia Iveyi. Messrs. M. Prichard and Son staged Mesembryanthemums, Sedums, dwarf Campanulas and Astilbes.

A graceful and interesting group of Dracaenas of various kinds was made by Messrs. L. R. Russell, Ltd. They included D. Victoria, D. Sanderiana, D. Goldiana, D. Lord Wolseley, with brilliantly coloured leaves, and Cordyline indivisa Albertii and C. i. Doucettii.

Greenhouse Carnations were shown by Messrs. C. Engelmann, Ltd., Messrs. Allwood Bros., and Messrs. Stuart Low and Co. The last-named also had a small collection of greenhouse plants including Oleanders and Tremandra verticillata. Mr. Charles Wall had several new Carnations of which Glorious, rosy-cerise, and Dixie, a yellow fancy, were very attractive. Border Carnations were shown by Messrs. Lowe and Gibson and by Messrs. Seymour and Anderson. A good collection of Roses was staged by Mr. J. H. Pemberton, while the Burbage Nurseries had several novelties.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair), Mr. H. S. Rivers, Mr. J. Cheal, Mr. P. C. N. Veitch, Mr. A. H. Pearson, Mr. A. Bullock, Mr. J. Wilson, Mr. P. D. Tuckett, Mr. H. Prince, Mr. W. Giles, Mr. F. Jordan, Mr. J. C. Allgrove, Mr. H. Markham, Mr. George F. Tinley, Mr. W. H. Divers and Mr. A. N. Rawes (Secretary).

Several new fruits were submitted for award. The best was a Raspberry named Exeter Yellow, shown by Messrs. R. Veitch and Son, Exeter; it originated as a chance seedling in the firm's nursery. The fruits are exceptionally large and good-flavoured. It was recommended that the variety be included in the trial of Raspberries at Wisley.

Mr. J. J. Kettle also exhibited his new apricot-coloured Raspberry named Lord Lambourne.

Sir Joseph Tichbourne, Bt., Tichbourne Park, Alresford, Hampshire (gr. Mr. C. Goodchild), showed some exceptionally fine fruits of Aubergine Goodchild's Selected. They are of the New York Purple type, but said to be a little firmer in the centre. They were exceptionally fine specimens, and a Cultural Commendation was awarded to Mr. Goodchild.

Messrs. Sutton and Sons showed some interesting Peas and Beans, including purple-fruited Broad Beans of the Windsor and Long-podded type; golden-podded Beans with white beans, yellow-podded Peas; purple-podded Peas; the Mummy Pea crossed with a variety having no tendrils, in which the progeny had pods at the top of the shoots in clusters, but with Acacia-like foliage without tendrils; Sugar Peas of the large-podded type, and the wild Pisum humile, with pods about one-and-a-half inch long.

Mr. J. C. Allgrove showed a grand exhibit of Gooseberries and Currants very attractively arranged in baskets of various sizes, and with cordon and bush trees in pots at the back, the latter having exceptionally heavy crops. The Gooseberries included about sixty varieties, of which the largest berried were Broom Girl, Speedwell, Leveller, of which a magnificent bush was also shown; Pilot, Conquering Hero, Succeed, and Surprise. Early Sulphur, which is the earliest Gooseberry to ripen, was included in the collection, also Green London, Yellow Warrington, Pitmaston Gage, Dan's Mistake and the almost black Ironmonger, with fruits as round as a black Grape and about the same size. A selection of half-a-dozen of the finest flavoured varieties is Langley Gage, Ironmonger, Langley Beauty, Whitesmith, Keen's Seedling and Warrington.

Messrs. Laxton Bros. exhibited several soft fruits, including many new Black Currants, Red Currants, Raspberries and Gooseberries raised by them. Laxton's No. 1 Red Currant is one of the best sorts in cultivation and said to be superior even to Perfection. They showed new Black Currants in Black Grape and Tinker, and a new Gooseberry named Bedford Red, like Whinham's Industry, but of more upright growth and a freer cropper.

Mr. H. Hemsley showed a representative collection of Currants, Gooseberries, Raspberries and Loganberries. The Gooseberries were exceptionally good and included excellent fruits of Careless, Lancashire Lad, White Campaign, Whinham's Industry, Keepsake, Whitesmith, Howard's Lancer and White Lion. They also had fine dishes of White Versailles White Currants.

Messrs. Rivers and Son exhibited some exceptionally fine Cherries in small boxes, of the varieties Monstreuse de Mezel, White Bigarreau, Turkey Black Heart, Ursula Rivers, Emperor Francis, Napoleon Bigarreau, Noir de Schmidt, Late Black Bigarreau, Bohemian Black Bigarreau, Bigarreau Noir de Guben, May Duke and Géant d'Hedelfingen.

CHERRY AND SOFT FRUITS COMPETITION.

A competition, open only to amateurs, for Cherries and soft fruits, attracted a fair amount of interest. The schedule comprised twenty classes for Cherries, Gooseberries, Black Currants, Red Currants, White Currants, Raspberries, Figs, Loganberries and other Rubi.

Only one exhibit was staged in the class for a collection of Cherries in not fewer than six varieties. The exhibitor was Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield, and he was awarded the first prize for fine fruits of Frogmore Early, Black Tartarian, Bedford Prolific, Bigarreau de Schreken, Black Knight, Florence, May Duke, White Heart and Elton. In the class for three varieties of Cherries, F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, was awarded the first prize for White Heart, Morello and Archduke. This exhibitor was also first in the class for a collection of Gooseberries in not fewer than nine varieties. His finest sorts were Trumpeter, Matchless, Colossal, Fearless, London City, Leveller, Speedwell, Lancer and Broom Girl; second, Sir Charles Nall-Cain with especially good fruits of Langley Beauty, Leveller and Keepsake.

The best dish of a red Gooseberry was Lancashire Lad, shown by Mr. W. J. Abrey, Tonbridge, and the best of a yellow variety, Leveller, shown by Mr. H. Coleman, Watford; second, Careless, shown by Mr. A. G. Robshaw, Golders Green. The best dish of a green or white variety of Gooseberry was Lancer, shown by Mr. W. J. Abrey; second, Mr. Coleman, with Shiner.

The finest Black Currants were shown by Mr. R. Staward, Ware Park Gardens, Ware, who had good bunches of Blacksmith, The Tinker and Raven; second, F. C. Stoop, Esq., with Bladwin, Boskoop Giant and Seabrook's Black. The best single dish of Black Currants was Boskoop Giant, shown by Mr. C. Percival Maw, Merstham; second, Mrs. Priestley, Orpington, with the same variety.

Mr. Stoop excelled in the class for three varieties of Red Currants with Laxton's Perfection, Southwell Red and Cherry Currant, and much the finest Red Currant in the single dish class was Littlecroft Beauty, shown by Mrs. Priestley; second, Perfection, shown by Mr. Staward.

Mr. Stoop, with White Versailles, excelled in the class for White Currants. This exhibitor had the best three varieties of Raspberries in Red Cross, Pyne's Royal, and Laxton's Bountiful. Mr. Staward was easily first in the class for one dish of Raspberries with a seedling; second, Pyne's Royal, shown by Mr. R. Collard, Shenfield. The best Loganberries were shown by Mr. J. E. Anstee, Sutton.

Two competed in the class for a collection of fruits, in which Sir Charles Nall-Cain was first with Brown Turkey Figs, Florence Black Currants, Bigarreau Napoleon Cherries, Laxton's A.1. Red Currants, Gooseberries, Pyne's Royal Raspberries and others; second, Mr. Stoop.

Awards to Bearded Irises.

The collection of bearded Irises which have been under trial at Wisley for several years have been judged, and the following awards made, by the Royal Horticultural Society on the report of the Joint Committee of the Royal Horticultural Society and the Iris Society.

Many varieties in the trial are still awaiting judgment, and the following is to be regarded as a preliminary list.

AWARDS OF MERIT.

White, or nearly White Varieties.—*Istria*, a collected form from Mr. W. R. Dykes, sent by The Orpington Nurseries, Kent. *White Knight*, raised by Mr. Saunders, and sent by The Orpington Nurseries, Kent. *Mystic*, sent by The Orpington Nurseries, Kent.

White Standards, Coloured Falls.—*Rhein Nixe*, raised by Messrs. Goos and Koenemann, sent by Messrs. Barr and Sons, Mr. Amos Perry, and Messrs. Waterer, Sons and Crisp.

Purple Bicolors.—*Lord of June*, raised by Mr. G. Yeld, sent by Messrs. Lowe and Gibson. *Leonato*, raised by Sir Arthur Hort, sent by Messrs. R. Wallace and Co. *Souvenir de Madame Gaudichau*, raised by Messrs. Millet, sent by Messrs. R. Wallace and Co. *Titan*, raised by Mr. A. J. Bliss, sent by P. L. Pilkington, Esq. *Imperator*, raised and sent by Messrs. Cayeux and Le Clerc. *Kharput*, sent by Messrs. Barr and Sons and Mr. Amos Perry.

Purple Selfs.—*Corrida*, raised by M. Millet, sent by Messrs. R. Wallace and Co. *Mars*, sent by Messrs. Barr and Sons. *Kochii*, sent by Messrs. R. Veitch and Son, and Messrs. Barr and Sons. *Kurdistan*, raised by Mr. W. R. Dykes, sent by Messrs. R. Wallace and Co.

Standards of Shot Shades.—*Mary Gibson*, raised and sent by Mr. Amos Perry. *Alcazar*, raised by Messrs, Andrieux-Vilmorin et Cie., sent by Messrs. Waterer, Sons and Crisp. *Tenebrae*, sent by The Orpington Nurseries. *Troades*, raised and sent by Mr. Amos Perry, *Billia*, raised and sent by Mr. Amos Perry. *Cardinal*, raised by Mr. A. J. Bliss and sent by Messrs. R. Wallace and Co. *Prosper Laugier*, raised by M. Vardier, sent by Messrs. Barr and Sons. *Ambassadeur*, raised and sent by Messrs. Vilmorin-Andrieux et Cie.

Varieties with Yellow Standards and Coloured Falls.—*Marsh Marigold*, raised by Mr. A. J. Bliss, sent by Messrs. Lowe and Gibson. *Fro*, raised by Messrs. Goos and Koenemann, sent by Messrs. Waterer, Sons and Crisp.

Yellow Varieties.—*Amber*, raised and sent by the late Mr. W. R. Dykes.

PAISLEY FLORISTS'.

On the occasion of the annual outing of this ancient Society, the members and friends visited Dupplin Castle, Perth, the residence of Lord Forteviot, and spent an interesting day in the extensive gardens.

The flower and vegetable gardens were visited in turn, and the fruit houses were also inspected. Tea was served in the gymnasium where Lord Forteviot extended a hearty welcome to the visitors. On behalf of the company Mr. A. MacGregor thanked His Lordship for his kindness, and a similar compliment was passed to Mr. Beatty and Mr. Feeny.

ANSWERS TO CORRESPONDENTS.

Club Root in Cabbages.—*E. H. W.* To correct the tendency of your Cabbages to develop "Club root" any form of lime is suitable, although quick lime is the most rapid in action. Any form that may be obtained should therefore be used for the purpose. Thorough cultivation of the soil is essential to rid it of insect grubs, soot being a good deterrent. Many grubs that are found in the soil are innocuous and some are even helpful.

Maggots in Soil.—*B. B.* The maggots are fly larvae, living principally on the great amount of organic matter in the soil. They may have been breeding in the soil used for potting various plants. If the plants are potted, it will be difficult to kill the maggots without injuring their roots, therefore, wherever possible, use soil free from maggots. To clear infected soil the most effective method is to use heat. Where this is impossible, one of the advertised soil fumigants should give good results. If a chemical soil disinfectant is used, some time must be allowed to elapse before the soil is used for potting purposes.

Names of Plant.—*E. K.* Probably Zephyranthes carinata. The specimen was badly damaged in transit. *J. D.* Rose Cheshunt hybrid. *J. C.* Sparmannia africana.

Communications Received.—H. W.—S. J. T.—J. D. C.—A. B. C.—A. H. B.—Newent—M. L.—A. E. C. H. T.—W. G.

MARKETS.

COVENT GARDEN, Tuesday, July 19th, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.... ...	30 0–42 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crassulas, pink, 48's per doz.	18 0–24 0
—scarlet, 48's, per doz. ...	18 0–24 0
Crotons, doz.	30 0–45 0
Cyrtomium ...	10 0–25 0
Fuchsias, 48's, per doz. ...	15 0–18 0
Heliotropes, 48's, per doz. ...	15 0–18 0
Hydrangeas, pink, 48's, per doz.... ...	18 0–24 0
—blue, 48's, per doz.... ...	24 0–30 0
—white, 48's, per doz.... ...	18 0–24 0
—larger sizes, each ...	4 0—5 0

	s. d s. d.
Marguerites, 48's, per doz. ...	12 0–18 0
Nephrolepis in variety ...	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pelargoniums,	
—Zonal, 48's, per doz. ...	9 0–10 0
—Ivy-leaf, 48's, per doz. ...	12 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Rhodanthe, white and pink, 48's, per doz.	9 0–10 0
Roses, Polyanthas, 48's, per doz.... ...	15 0–18 0
Verbenas, pink, 48's, per doz.	12 0–15 0
—scarlet, 48's, per doz. ...	15 0–18 0
Viscarias, in var., 48's, per doz.	10 0–12 0
—60's, per doz.	4 6—5 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Achillea, per doz. bun ...	4 0—6 0
Adiantum decorum, doz. bun.	9 0–12 0
cuneatum, per doz. bun. ...	6 0—8 0
Alstroemeria per doz. bun. ...	9 0–12 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short ,, ...	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. ,, ...	1 0—1 6
short ,, ...	0 6—1 9
Asters, white, per doz. bun.	12 0–15 0
—coloured, per doz. bun. ...	10 0–12 0
Carnations, per doz. blooms .	1 6—3 0
Clarkia, per doz. bun.	4 0—6 0
Coreopsis, per doz. bun. ...	1 0—1 6
Cornflower, blue, per doz. bun.	1 6—2 6
—pink, doz. bun.	2 0—3 0
Croton leaves, per doz. ...	1 9—2 6
Daisies, white, large, doz. bun.	2 6—3 6
Delphinium, blue, per doz. bun.	6 0—0 0
Ferns, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	4 0—8 0
Myrtle, green, per doz. bun.	1 6—2 0
Stock, double white, per doz. bun. ...	6 0–12 0
Gaillardia, per doz. bun. ...	3 0—3 6
Gladiolus, Peach Blossom, per doz. bun. ...	9 0–12 0
— The Bride, per doz. bun.	12 0–18 0
— giant varieties, per doz. spikes—	
—pink shades...	4 0—5 0
—scarlet ...	3 6—4 6
—white ...	4 0—4 6

	s. d. s. d.
Gypsophila elegans per doz. bun. ...	6 0—8 0
—paniculata ...	10 0–15 0
Heather, white, per doz. bun.	12 0–18 0
Hydrangeas, white, per doz. bun.... ...	36 0–42 0
—coloured, per doz. bun. ...	30 0–36 0
Iceland Poppies, per doz. bun.	2 0—2 6
Lapagerias, per doz. blooms .	2 6—3 6
Larkspur, various, per. bun. ...	6 0—8 0
Lilium lancifolium album, per bun. ...	3 6—4 0
—short, per doz.	3 0—4 0
—rubrum, long, per bun. ...	4 6—5 0
—short, per doz.	2 6—3 0
—longiflorum, long, per doz.	2 0—2 6
—short, doz. blooms ...	1 6—2 0
Lily-of-the-Valley, per doz. bun.	30 0–36 0
Marigolds, per doz. bun. ...	4 0—5 0
Nigella, blue, per doz. bun.	4 0—6 0
Orchids, per doz.	
—Cattleyas ...	36 0–48 0
—Cypripediums	6 0—8 0
Richardias, —yellow, per doz. blooms .	12 0–24 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	2 6—3 0
—Madame Butterfly ...	2 6—3 6
—Golden Ophelia	2 0—3 0
—Mrs. Aaron Ward ...	1 6—2 6

Cut Flowers, etc.—Cont.

Roses, per doz.	s. d. s. d.
—Madame Abel Chatenay ...	1 6—2 0
—Hoosier Beauty	2 6—4 0
—Liberty ...	1 6—2 0
—Molly Sharman Crawford ...	1 6—2 6
—Premier ...	— 3 0
Smilax, per doz. trails ...	4 0—6 0
Statice sinuata, mauve, per doz. bun. ...	12 0–24 0
Scabiosa caucasica, per doz. bun.	3 0—4 0

	s. d. s. d
Stephanotis, per 72 pips ...	2 6—3 0
Stock, per doz. bun.—	
—double white	6 0–12 0
— — mauve ...	12 0–18 0
— — pink ...	12 0–18 0
Sweet Peas, in variety ...	4 0–10 0
Sweet Sultans, white, per doz. bun.... ...	6 0–10 0
—mauve, per doz. ...	6 0–10 0

Remarks.—Practically all outdoor blooms have been rather poor in quality during the past week, including Cornflowers, Scabious and Gypsophila elegans. Delphiniums have also suffered owing to the heavy rains. More Gypsophila paniculata has been on sale and supplies are increasing almost daily. Carnations continue to arrive in large quantities, but Roses have been somewhat shorter in supply, especially white blooms. More Asters have been available. White and coloured Stocks have been spoiled by the heavy rains, and sound flowers have realised good prices. Good Achillea The Pearl is also rather inferior. Lilium longiflorum was a trifle firmer in price this morning. White and pink L. lancifolium are much finer in quality, and prices are the lowest so far this season. Chrysanthemum have made their first appearance this season, disbudded blooms of white and bronze sorts have been on sale, but they are rather poor in quality and cannot be recommended. Of Gladioli, the primulinus varieties are the most plentiful, and they are very good in quality. Halley is the most plentiful of the Giant varieties, and good scarlet and white spikes are in demand. Sweet Peas have been generally poor in quality for sometime past.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, New Zealand—	
—Newtown ...	19 0–21 0
—Dunn's ...	19 0–21 0
—Delicious ...	19 0–21 0
—Cleo ...	20 0–23 0
—Sturmer Pippin	18 0–21 0
—London Pippin	17 0–18 0
—Spitz ...	17 0–18 0
—Jonathan ...	— 23 0
Apples, Portugal, per case ...	15 0–18 0
Apples, English, per bushel ...	5 0—7 6
Apricots, French, per crate ...	8 0–10 0
— —	9 0–11 6
Bananas ...	15 0–23 0
Black Currants—	
—English, per lb. ...	0 4½–0 7
Cherries, English—	
—Napoleon, per strike ...	10 0–12 0
—Noble ...	10 0–12 0
Currants, Red, 3 lb. chip ...	1 0—1 3
Figs, per doz....	6 0–18 0
Gooseberries—	
—Leveller, per lb.	0 4—1 0
—Red, ½-sieve...	4 0—6 0
—Cooking, ½-sieve	2 0—2 6
Grape Fruit— per case	
—Blue Goose...	30 0–40 0

	s. d. s. d
Grapes, English	
—Black Hamburgh, per lb.	1 6—4 0
—Alicante ...	1 6—3 0
—Gros Maroc	1 6—3 0
—Muscat ...	3 0—8 0
—Canon Hall...	4 0—8 0
Lemons, Messina Boxes ...	9 0–20 0
—Naples, per case	20 0–26 0
Melons, each—	
—English and Guernsey ...	2 0—7 0
Canteloup, each... ...	3 6—8 0
Oranges, per case—	
—Cape Navel...	16 0–20 0
—Italian ...	40 0–50 0
Nectarines, doz.	6 0–18 0
Peaches, per doz.... ...	6 0–21 0
Pears, French—Williams's Bon Chretien, per box	— 10 0
Pines, case ...	21 0–40 0
Plums—	
—Spanish Gages, ½-sieve ...	6 0–10 0
—Washington, ½-sieve	4 0—6 0
—Italian, case...	4 0—6 0
—Portugal Gages, ½-sieve ...	4 6—8 0
Raspberries, 4 lb. chip	0 9—1 0
Strawberries—	
—Kent, 2 lb. chip	2 6—4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey	1 0—1 9
Worthing Forced ...	1 0—1 9
Beets, per cwt.	5 0—6 0
Cabbage, per doz.... ...	2 0—2 6
Carrots, per ½-bag. ...	4 0—5 6
Cauliflowers—	
—English, per crate ...	4 0—6 0
Cucumbers, doz.	3 6—5 0
—Flats, 36's, 42's	10 0–14 0
Leeks, per doz.	2 0—2 6
Lettuce, round, per doz. ...	0 9—1 0
—long	0 9—1 6
Mint, per doz....	1 6—2 0
Marrows, per doz.	2 6—4 6
Mushrooms—	
—cups... ...	1-9—2 6
—broilers ...	1 0—1 6
—field, per lb.	0 8—1 0

	s. d. s. d.
Onions—	
Valencia ...	11 0–13 0
—Egyptian ...	12 0 18 6
Parsnips, per cwt. ...	4 0—4 6
Peas, per bushel	6 0–10 0
Potatos—	
—St. Malo, per cwt.... ...	9 0—10 0
—English ...	9 0–10 0
Radishes, per doz.	1 0—2 0
Savoys, per tally	8 0–12 0
Tomatos, English—	
—pink ...	4 0—5 0
—pink and white	4 6—5 6
—white ...	— 4 0
—blue ...	3 6—4 0
—Guernsey ...	— 4 0
—Dutch ...	3 0—3 6
—Italian, 18 lbs.	— 2 6
Turnips, per cwt.	3 6—4 6

Remarks.—Business has not been good during the past week. The volume of produce handled has been heavy, but the weather has militated against freedom in buying. At the time of writing there is a distinct improvement. Hothouse fruits, such as Grapes, Peaches, Melons, Nectarines and Figs, are selling moderately well. A few Strawberries are still available. Raspberries have been a poor market for some time now, owing to the excessive rains making the berries unsaleable, even after a few hours in the market. Black Currants are selling well, although quantities on the market are the heaviest that have been handled for some years past. It is very noticeable how popular the 4 lb. and 6 lb. chip baskets of Black Currants are; even large jam buyers on the market preferring that package to any other and paying more accordingly. Red Currants are selling well. Some very good Leveller Gooseberries are now arriving, the crop being comparatively heavy this year. A few English Apples are available, most of them probably thinnings. New Zealand Apples are still arriving and selling fairly well in spite of competition with other fruits. Abundant supplies of English Tomatos are selling at rather low prices, but a spell of warm weather would improve the trade for both those and Cucumbers. Dutch Tomatos are cheap and plentiful. For the time of year, forced French Beans are selling remarkably well, the outdoor crop being on the late side. Peas are variable in condition and quality. Salads are not a brisk trade and leave much room for improvement. Green vegetables are a moderate business. The Potato trade is fairly steady, with little variation in prices.

GLASGOW.

The cut flower market was quiet and featureless in the past week. Carnations continued to be plentiful and cheap at 1/4 to 1/9 per dozen, and Roses also were cheap at prices ranging from 1/- to 2/6 per dozen. Sweet Peas were worth 1/6 per large bunch. English-grown, 10d. to 1/- for 12's; Scotch-grown, 4d. to 8d. Marguerites realised 3d. to 4d. per bunch; Anemones, 10d.; Lilium longiflorum (Harrissii) 2/- to 2/3 per dozen; Gypsophila, 6d.; Gladioli, 1/4 to 1/9 (6's); and 2/- to 2/3 (12's).

As usual in the Fair holiday week, business in the fruit section was rather slow. Home-grown soft fruits were more or less affected by the weather, and the quality of Strawberries was irregular, a large proportion of the daily supplies being soft. English berries made 6d. to 9d., and Scotch, 6d. to 7d., but 1/- per lb. was paid for first-grade fruits. Prices of English Black Currants averaged 7d. to 9d. per lb. Peaches sold for 6/- per dozen; Gages, 18/- per sieve; Gooseberries, 4/- to 4/6; Red Currants, 5d. to 6d. per lb.; Royal Plums, 10/- per package; English Apples (Keswick Codlin), 3d. per lb.; Muscat Grapes, 3/6 per lb.; black Grapes, 1/6 to 2/- per lb., and Cherries, 5/- to 18/-, according to variety and quality. Scotch Tomatos were cheaper at 5d. to 7d. per lb.; Sunkist Oranges realised 30/-, and South African seedless Oranges, 24/-. New Zealand Apples fetched 21/- per case; Naples Lemons, 21/- to 24/-; and Palermo Lemons, 16/- to 17/-.

In the vegetable section, Cucumbers realised 7/- per dozen; Lettuces, 1/6 to 2/-; Cauliflowers, 3/- to 5/-; Radishes, 3/- dozen bunches; Syboes, 8/-; Peas, 12/- per pot, and Rhubarb, 12/- per cwt.

TRADE NOTES.

Messrs. G. H. Richards, Ltd., 234, Borough High Street, London, S.E.1, have purchased the goodwill and sole right to manufacture Kamforite and Compound Horticultural Manures formerly carried on by Messrs. Hensman Brothers of Horncastle. Henceforth the Kamforite preparations will be manufactured and distributed by Messrs. Richards from London.

Weeds grow apace at all times, and especially so during such a wet, sunless period as gardeners are experiencing. The old method of hand-weeding the garden paths has, fortunately, given place to the modern method of using a weed killer. An effective weed killer, such as Eureka, manufactured by Messrs. Tomlinson and Hayward, saves much time and labour, as application is quite easy. Moreover, its use does not discolour the gravel.

Any of our readers requiring information and advice respecting Patents, Trade Marks, or Designs, should apply to Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle*.

GARDENING APPOINTMENT.

Mr. G. R. Pierce, for the past twelve years general foreman at Wadhurst Hall Gardens, Wadhurst, Sussex, as gardener to Sir John Blunt, Bart., Huntleigh, Tunbridge Wells, Kent. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

THE
Gardeners' Chronicle

No. 2118.—*SATURDAY, JULY* 30, 1927.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 63·4°.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 27, 10 a.m. Bar. 29·7. Temp. 63°. Weather, Showery.

The Control of Glasshouse Pests.

Growers of plants under glass, no matter how much care they take in cultivation, find, upon occasion, that their plants are attacked by White Fly, Aphis, or other insect pests. Hitherto the only thoroughly efficient method of ridding glasshouses of these unwelcome visitors has been that of cyaniding by means of sodium cyanide. Given intelligent use, this method is both effective and free from risk; but there is naturally an objection to the employment of an insecticide which requires meticulous care if all risks to the operator are to be avoided. It is therefore of importance for growers of plants under glass to know that calcium cyanide provides a simpler method of cyaniding than does sodium cyanide. This substance, as specially manufactured in the United States of America, contains forty per cent. to fifty per cent. of $Ca(CN)_2$. When exposed to moist air it undergoes chemical change and gives off hydrocyanic acid gas, the insect-killing agent. The mode of employment of calcium cyanide is simple. The right quantity of the material is placed in a covered funnel provided with a tap, and the operator as he walks through the glasshouses, allows the calcium cyanide to run out from the funnel on to the ground. He then makes a prompt exit, and locks the door behind him. Mr. H. W. Miles, entomologist to the American Cyanamid Company, has carried out a series of experiments[*] with calcium cyanide in this country with convincing results. He finds that White Fly is easily controlled by its use. Among plants fumigated in this way were Chrysanthemums, Azaleas, Runner Beans, Cucumbers, Freesias, Tomatos and Arums (Richardias). For young plants the strength of the application is naturally much smaller than that which is used for mature plants. So small an amount as one-twelfth of-an-ounce per 1,000 cubic feet was found to suffice to keep White Fly (Trialeurodes vaporariorum) in check. Fumigation by means of a dosage three times that strength, *i.e.*, one quarter-ounce per 1,000 feet, may be used with impunity and with satisfactory results for Tomatos, and a rather larger dose—one-third of an ounce per 1,000 cubic feet—suffices to rid Chrysanthemums of White Fly. To ensure good results, the houses must be neither too dry nor too wet. If dry, the paths should be damped an hour or two before fumigation; if very wet, the calcium cyanide should be sprinkled on dry boards laid down on the paths of the house. Open water tanks in the house should be covered over. Needless to say, if the house is leaky, larger quantities of the insecticide must be employed, and it is also important for those who use calcium cyanide to remember that the glasshouses should be thoroughly ventilated after fumigation. Aphides of all kinds, including the common Aphis, Myzus persicae, appear to be easily controlled by this insecticide, and Thrips are kept within bounds. So also is Mealy Bug. Experiments made in Guernsey in houses containing vines infested with this pest proved very satisfactory. The cost of fumigation is low. To fumigate a glasshouse of 40,000 cubic feet, at a dosage of one quarter-ounce per 1,000 cubic feet, costs less than two shillings, apart from the cost of labour.

Young Gardeners and the John Innes Horticultural Institute.—We desire to draw the special attention of young and enthusiastic gardeners to an advertisement in our columns wherein the John Innes Horticultural Institution announces five vacancies for Exhibitioner Gardeners on January 2, 1928. In these days when the value of a training on scientific lines is so widely recognised and special qualifications are necessary for nearly all responsible posts, we feel sure that this opportunity will appeal to the more intelligent type of young man who wishes to take up horticultural work as a profession. The John Innes Institute gives a thorough training in the practice of horticulture, including the management of public gardens and parks, fruit cultivation, and the growth of flowers under glass for market. Lecture courses are given in the scientific principles underlying horticulture, and in addition there are opportunities for exhibitioners to become acquainted with the very important scientific investigations going on at the Institution. The Exhibitions are tenable for two years, and carry a subsistence allowance of £2 rising to £2 7s. in the second year.

Scottish Sweet Pea Trials.—The Committee of the Scottish National Sweet Pea, Rose and Carnation Society has decided to continue the trial of Sweet Peas, not in commerce, in 1928. The plants will be grown on the cordon system, by the Secretary, at Westwood Cottage, Helensburgh. Twenty-five seeds of each variety should be sent, to reach the Hon. Secretary, Mr. John Smellie, Westwood Cottage, Helensburgh, Dumbartonshire, not later than September 20, as the last week of that month is the best time to sow in Scotland. A charge of five shillings will be made for each variety, and raisers are requested not to send any but those varieties which they consider are properly fixed.

Swanley Horticultural College Scholarships.—As a result of the entrance scholarship examination at Swanley Horticultural College, Miss Stella Lee, has been awarded a scholarship of £40, and Miss Marjorie Harris, an exhibition of £30.

Scholarships at Wisley.—The Council of the Royal Horticultural Society will shortly consider applications for two scholarships for young gardeners, tenable in their Gardens at Wisley. Young men between the ages of seventeen and twenty-two with at least three years' experience in private or nursery gardens, whose means preclude them from otherwise taking a course at Wisley, are eligible for consideration. The scholarships carry remission of fees and a maintenance allowance (the exact amount of which is in the discretion of the Council after considering all the circumstances) of about £85 a year. Full particulars may be obtained from the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, to whom completed applications must be sent by August 20, 1927.

Clay Cup for a Scented Rose.—The Secretary of the Royal Horticultural Society asks us to state that the Clay Cup was awarded to Mr. Frederick Evans, 89, Shaftesbury Road, Reading, Berks., for his Rose named Abol, instead of to the Chalk Hill Nurseries, who only exhibited the Rose on his behalf.

Royal Gardeners' Orphan Fund.—Small efforts, when multiplied, produce big results, therefore we commend to the notice of our readers the action of Mr. Albert O. Marshall, gardener to the Lady Elinor Denison, Ossington Hall, Newark-on-Trent, who showed his interest in the Royal Gardeners' Orphan Fund by making a collection on behalf of the charity when members of the Newark Horticultural Society visited the gardens at Ossington Hall. The amount realised—which we have placed in our Orphan Fund Box—was £1 11s. 11d., but Mr. Marshall hopes to "forward a further sum later in the year."

Roadside Trees.—By a curious anomaly it was not until the passing of the "Roads Improvement Act" of 1925 that County Council and other Highway Authorities were permitted to plant and maintain trees by their roadsides. Urban District Councils have long been empowered to spend public money in this direction, to the great benefit of their districts. Following the passing of the Act the Kent County Council appointed a sub-committee, under the Chairmanship of Sir William Geary, Bt., to consider the subject in relation to the county roads and, more especially, the new by-pass roads. Sir William N. M. Geary, of Oxon Hoath, Tonbridge, one of the largest landowners in the county, is well-known for his love of hardy trees and his endeavours to further the planting of trees in all possible places. On his own estate he has planted widely and, in the hope of adding to the enjoyment of the public, he has planted rows of flowering trees on his boundaries where the roads are too narrow for any planting to be done by the authorities. The report of the Kent Sub-Committee has now been completed, printed and submitted to the Council. With such a Chairman as Sir William Geary the report possesses especial value, and it is to be hoped that not only the Kent County Council but other bodies will seriously consider the many

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On the Control of Glasshouse Insects with Calcium Cyanide." By H. W. Miles. *Annals of Applied Biology*, Vol. xiv., No. 2, May, 1927.

useful and practical recommendations that have been made. This committee immediately realised that "Many of the existing county main roads have not sufficient width of margin to permit of tree planting," but suggests that landowners and others might well be invited to co-operate to improve the amenities of their districts. The report deals with the various circumstances that have to be considered and includes a thoughtful selection of suitable trees which would provide a pleasant variety. The committee has considered the question of planting fruit trees by the roadsides and evidently has arrived at the conclusion that the time is not yet, though they state that "it is a question of general policy whereon we refrain from offering an opinion." The list of recommended trees includes Ginkgo biloba, Fraxinus Ornus, Ailanthus glandulosus, Liquidamber styraciflua, various Maples, Pyruses and Prunuses.

International Horticultural Congress in Vienna.—The programme for the forthcoming Vienna Horticultural Congress is now to hand, and gives a full list of the subjects to be discussed. These include international regulations for the nomenclature of plant novelties; international agreement as to the granting of Certificates of Merit and on colour-description; state and municipal horticulture; the exchange of young nurserymen for training abroad; the position of "horticultural architects"; and the laws of inheritance in flower and vegetable raising. Detailed instructions for Congress members have been sent out from the offices of the Austrian Horticultural Society (12, Parkring, Wien 1), including a time-table of trains on the various Austrian lines, and the prices prevailing in Vienna hotels, with useful information as to exchange rates, according to which the Austrian schilling now equals 7d. in English coinage. The Congress will be formally opened in the Festival Hall of the University of Vienna on September 20, at 9 a.m., and discussions will continue until 1.30, when lunch will be taken at the Rathauskeller. At 2.30 p.m. the gardens of Schoenbrunn (now owned by the State) will be visited. The further programme includes several evening receptions, visits to a number of interesting gardens and horticultural establishments, and, on Sunday, September 25, an excursion to the Schneeberg mountain, from whence a magnificent view should be obtained of the Alps of Lower Austria and Styria.

R.H.S. Examinations in 1928.—The Examinations of the Royal Horticultural Society will be held in 1928 as follows:—*Written Examinations.*—General Examination (Seniors and Juniors), Wednesday, March 21; Teachers' Examination (Preliminary and Advanced), Saturday, March 24; National Diploma (Preliminary and Final), Saturday, May 5. *Practical Examinations.*—Teachers' Examination (Advanced), Friday, June 15; National Diploma (Preliminary), Tuesday and Wednesday, June 19 and 20; National Diploma (Final), Thursday and Friday, June 21 and 22. All entries, except those for the National Diploma, should be made on the form in the syllabus obtainable from the Secretary of the Royal Horticultural Society, Vincent Square, Westminster.

Danish Jubilee Exhibition.—To celebrate the fortieth anniversary of the establishment of the Danish Gardeners' Association, an exhibition is being arranged to take place between September 17 and 26 in Copenhagen. The exhibits are to represent every branch of gardening, horticulture and nursery work, and will give a good general idea of the high standard attained in Denmark. Excursions of various kinds are also being arranged in connection with the exhibition, which will give foreign visitors an opportunity of seeing something of a country which is very well worth a visit.

Flower Show at Harrogate.—The North of England Horticultural Society will hold an exhibition at Harrogate on August 5 and 6, in conjunction with the Harrogate Agricultural Society, and there will be no separate charge for admission to the flower-show tent. No prize schedule has been issued, so all the exhibits, private and trade, will be non-competitive. A fine display is anticipated and hopes are entertained that next year a schedule may be issued. The Rev. J. Bernard Hall is manager of the Horticultural Section at Harrogate. H.R.H. Princess Mary, Viscountess Lascelles, hopes to visit the show.

M. John Vachoux.—It is with much pleasure we publish the portrait of M. John Vachoux of Geneva, president of L'Association des Horticulteurs de la Suisse Romande, who presided so genially and successfully over the deliberations of the annual Conference of the Federation Horticole Professionnelle Internationale held at Geneva in June. M. Vachoux is a nurseryman who has devoted special attention to the gardening features of cemeteries and churchyards and is held in high esteem by the professional horticulturists of the Canton of Geneva. L'Association des Horticulteurs de la Suisse Romande was created in June, 1920, on the initiation of the horticulturists of the town of Lausanne, the capital of the Canton of Vaud.

M. JOHN VACHOUX.

This Association has for its object the defence of the interests of nurserymen who have businesses in French and Italian Switzerland, and in accordance with the idea of its creators and especially those of its first President, the late M. Frederic Pittet, it was made absolutely autonomous, not collaborating closely with the mother society, the Association of Horticulturists. To M. Vachoux this appeared to be a fundamental error, as without the collaboration of the main or parent Society, which was ten times the size of his own, it was not possible to effect a solution of any problem of a national character, consequently when he was chosen President, in January, 1923, he already realised the importance of co-operation and worked successfully to secure that end, so that now the most cordial understanding exists between the two Associations and only the difficulties of language make it necessary to keep the two separate. For this work alone M. Vachoux has won the gratitude of nurserymen, seedsmen and florists in the southern parts of Switzerland.

London Gardens Exhibition.—The London Gardens Guild, in conjunction with the *Daily Express*, is again organising an exhibition of flowers at the Temple Gardens, Victoria Embankment—lent by kind permission of the Honourable Society of Benchers of the Inner Temple—on September 3, 4 and 5. This will afford an opportunity for Londoners to see some of the beautiful flowers grown in the gardens entered for the recent All-London Gardens Championships (in which there were over 12,000 entries), as there is a special section devoted to the prize-winners in that Competition. The Exhibition will be on a much larger scale this year, and a very comprehensive schedule has been compiled, which includes sections for individual, as well as corporate displays by local garden societies of London-grown flowers. This is one of the rare occasions when other than professional gardeners are afforded the chance to exhibit at a great public show. It will enable them to prove to their fellow-citizens that London gardeners can provide excellent exhibits. In addition to these exhibits there will be displays from municipal authorities, and firms famous in the gardening industry will also be showing, including trade growers who specialise in plants which thrive particularly well in the London area. There will also be replicas of the prize-winning gardens. Large Gold, Silver and Bronze Medals will be awarded for the best exhibits in each of the sections, and for each of the championship classes. Schedules and entry forms are now available, and can be had on application to the Organising Secretary, London Gardens Guild, 124, Walworth Road, London, S.E. 17.

Window Box Competition in Brussels.—The Royal Horticultural Society of Brussels is organising, for the period of the forthcoming International Horticultural Exhibition in September next, a competition for flower-decorated windows, house-fronts and balconies. There will be no entrance fee, and all householders will be cordially invited to compete for the numerous diplomas, prizes and medals which are to be awarded. The idea is an excellent one, as the result will be seen in the brighter appearance of the town, with almost every window gay with seasonable flowers.

Rhododendron Association.—At the first Council meeting of the new Rhododendron Association the following were elected Honorary Life Members of the Association:—Mr. J. C. Williams, Professor W. Wright Smith, Mr. W. J. Bean, V.M.H., Mr. E. H. Wilson, V.M.H., Mr. George Forrest, V.M.H., and Captain F. Kingdon Ward. It was decided that any persons joining the Association prior to December 31, 1927, should be known as Founder Members.

Vegetable Show at Westminster.—Arrangements are now well forward for the Royal Horticultural Society's Vegetable Show which will be held at Vincent Square, on Tuesday, September 13. A schedule of thirty-seven classes is available and copies may be had on application to the Secretary of the Society; entries close on September 6. The R.H.S. Challenge Cup will be awarded to the competitor who secures the greatest number of first-prize points; the winner of the first prize in Class 1 (for a collection of a dozen kinds of vegetables) is, however, excluded from the "points" competition, as he will receive the Sutton Cup and £10. In the four classes for collections of vegetables the value of the third class single fare from the competitor's nearest station to London will be added to first, second and third prizes, but in the event of a competitor winning more than one of these prizes, only one railway fare will be paid. This sounds rather parsimonious and we think the Society should pay the return railway fare in the event of a competitor winning two or more prizes in these classes.

Standard Collection of Daffodils at Wisley.—In pursuance of their policy of giving Awards to plants intended for garden decoration only after trial in their Gardens, the Council of the Royal Horticultural Society is this year planting a standard collection of Daffodils at Wisley representative of all the recognised sections and of known value in the garden. Growers of seedlings are invited to send six (or three) bulbs of their varieties for trial against this standard collection. These bulbs should reach the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, so soon as possible and not later than September 15, 1927.

Royal Compliments at Liverpool.—At a meeting of the Liverpool Parks and Gardens Committee, the Deputy Chairman, Mr. Holme, moved a special vote of thanks to Mr. J. J. Guttridge, the Park Superintendent, and his staff, for the masterly way in which the floral decorations were carried out at the Town Hall, St. George's Hall and elsewhere in the city on the occasion of the recent Royal visit. Both the King and the Queen expressed their admiration of Mr. Guttridge's artistic efforts and complimented the City upon the beauty and arrangement of the flowers provided by its Parks Department, and these gracious compliments gave rise to the special vote of thanks referred to.

Appointments for the Ensuing Week.—MONDAY, AUGUST 1: Wadhurst Gardening Association's Show; King's Lynn Horticultural Society's show; Pershore Flower Show; Chippenham Horticultural and Horse Society's show. TUESDAY, AUGUST 2: Abbey Park (Leicester) Flower Show (two days); Turiff Flower Show; Royal Caledonian Horticultural Society's meeting. WEDNESDAY, AUGUST 3: Royal Horticultural Society's Committees meet; Northampton Horticultural Society's show (two days); Royal Horticultural Society of Ireland show (three days); Scottish National Sweet Pea, Rose and Carnation Society's show (two days); Kings Walden Flower Show; Dublin Flower Show (three days); Nottingham and Notts. Chrysanthemum Society's meeting. FRIDAY, AUGUST 5: Harrogate Agricultural and Horticultural show (two days); Accrington and District Chrysanthemum Society's meeting; Killearn Flower Show. SATURDAY, AUGUST 6: Stonehaven Flower show; Kircudbright Flower Show; Leven and District Flower Show; Lockerbie Flower Show; Blackburn and District Horticultural Society's meeting.

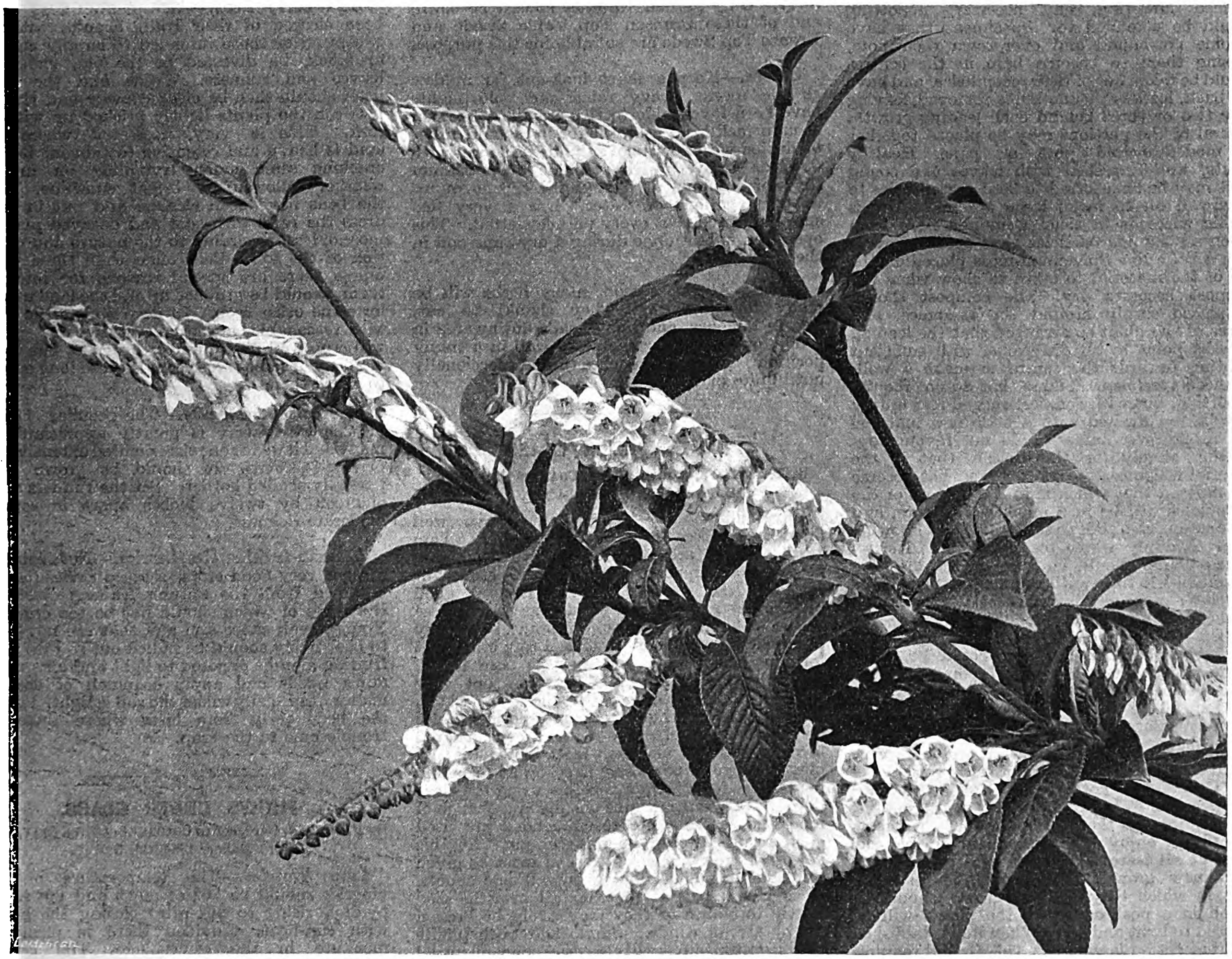

FIG. 31.—CLETHRA DELAVAYI.

R.H.S. First-Class Certificate, July 19. Flowers white. Shown by Mr. Gerald W. E. Loder. (see p. 78).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Fortune's Yellow or Salmon-coloured Rose.*—In a "Sketch of a Visit to China in search of New Plants," published in the first volume of the Journal of the Horticultural Society, I noticed the discovery and introduction of a very beautiful yellow or salmon-coloured Rose. I had been much struck with the effects produced by it in the gardens of Northern China, where it was greatly prized; and I had no doubt it would succeed equally well in this country. But from some cause—probably ignorance as to its habits or to the treatment required—my favourite Wang-jan-Ve, as the Chinese call it, was "cried down." It had been planted in situations where it was either starved or burned up, and in return for such unkind treatment the pretty exotic obstinately refused to produce any but poor miserable flowers. Then the learned in such matters pronounced it quite unworthy of a place in our gardens amongst English Roses; and I believe, in many instances, it was either allowed to die, or was dug up and thrown away. Thus five or six years have elapsed since the introduction of this fine climber, and it has never been in its proper garb until this summer. Your correspondent "J. R., Sevenoaks," seems to have been as successful with it as the Chinese about Ningpo and Shanghai. With him it is "a Rose nearly as rampant as the old Ayrshire, quite hardy, and covered from the middle of May with hundreds of large loose flowers, of every shade, between a rich reddish buff and a full coppery pink." Messrs. Standish and Noble of Bagshot, have been equally successful. In a letter lately received, they say: "We have had your salmon-coloured Rose in great beauty this year; the old plants in the open ground (standards) were one mass of blooms, the heads of each being more than four feet through." Such are the results in two places this year, and I dare say your correspondent "J. R." and Messrs. Standish and Noble, would inform you that no great amount of skill was necessary in order to bring the Rose into this state. It is perfectly hardy, scrambling over old walls like an Ayrshire, but it requires a rich soil and plenty of room to grow. The Chinese say that night-soil is one of the best manures to give it. Only fancy a wall completely covered with many hundred flowers, of various hues—yellowish, salmon, and bronze-like, and then say what Rose we have in the gardens of this country so striking, and how great would have been the pity if an introduction of this kind had been lost through the blighting influence of such ignorance and prejudice as have been shown by the person to whose care it was first entrusted. *R. F., Gard. Chron., July* 13, 1852.

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon,
Bletchley Park, Bletchley, Bucks.

Epidendrums.—Although these Orchids are not grown to the same extent as formerly, there are a few which are well worthy of cultivation. One of the most useful and decorative species which flowers at this season is E. prismatocarpum, and few Orchids last in bloom over a longer period. So soon as the plants have finished flowering, any necessary repotting should be attended to. Specimens that have become pot-bound and overgrown their pots, causing them to become bare in the centres should be taken out of their receptacles, and have the back, leafless pseudo-bulbs removed, leaving only two or three behind each leading growth. Several of the portions may be placed together in moderate-sized pots or pans. Healthy plants, well furnished with leaves and sound roots may be transferred to larger receptacles to be grown on to make large specimens. This Orchid succeeds in clean Osmunda fibre from which all the fine particles have been removed, with a little live Sphagnum-moss placed on the top of the material to serve to show when the compost becomes dry. The compost should be placed firmly around the rhizomes, and pieces of the plant so arranged that the leading growths point in all directions, with sufficient pointing towards the centre to make a well-balanced specimen. Plants that do not require re-potting, but with compost ragged and untidy may be top dressed with a little new material and made presentable. I do not favour top-dressing, simply for the reason that if the material which is exposed to the air has become decomposed that which is in the bottom of the receptacles will be in a much worse state, and top-dressing also adds to the difficulty of knowing when to apply water to the plants. Newly-potted plants should be kept on the dry side for some little time until roots have entered the compost; on bright days an occasional spraying overhead will be beneficial. Whenever water is applied during the plants' active season of growth, a thorough soaking should be given but not again until they have become dry once more. This Orchid needs to be grown in a light position, where the air circulates freely and in an intermediate temperature.

Epidendrum vitellinum..—There are very useful summer and winter flowering varieties of this Orchid and both last a considerable time in perfection. The flowers are always attractive, and brighten up the cool house in their season. The plants enjoy the atmosphere of the cool house at all seasons; they should be re-potted when new growth commences. The shallow pans, in which they are best grown, should be placed in a position where the plants will be exposed to light and air. When well established and root action is vigorous, this Orchid requires liberal supplies of water until the new pseudo-bulbs are completed, but during their season of rest only sufficient moisture is needed to keep the pseudo-bulbs plump and firm.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord
Wavertree, Horsley Hall, Gresford, N. Wales.

Spring Cabbage.—A seed-bed should be prepared in an open position for the sowing of spring Cabbage. Make the soil firm before sowing the seeds for the production of the earliest supplies. Sow the seeds thinly in drills made about ten inches apart. If birds are troublesome, place a net over the beds. So soon as the young plants appear, keep them well dusted with old soot to ward off the Cabbage butterfly, which is often very destructive to seedling Cabbages. Make successional sowings until about the third week in August, according to the district, as sometimes the early sowings are apt to prove too forward, especially when the weather remains very open. Harbinger is an excellent variety for very early supplies, and it may be grown in a very small space, the heads being very compact. A distance of fourteen inches by twelve inches apart is suitable for this variety. It is also very hardy and does not readily run to seed.

Garden Swedes.—This crop will be found useful for late use if sown now in drills drawn about eighteen inches apart, in ground which has recently been cleared of early Potatos, Peas, etc., and is in good heart. Fork the ground over, give a light dressing of superphosphate and burnt garden refuse and rake the dressing into the soil. So soon as the plants are growing freely, afford them a dressing of old soot; keep the ground well hoed, and thin the seedlings early. Only garden varieties should be sown, and of these Crimson Top Table Swede and Bronze Top Swede are suitable for this purpose.

Onions.—Keep a sharp look-out for mildew as the recent heavy rains and cold nights have been favourable to this trouble. So soon as an attack is noticed, the foliage should either be dusted with flowers of sulphur while wet with dew, or sprayed with sulphide of potassium (liver of sulphur) at a strength of one ounce to three gallons of water. Use a very fine spray, and see that every part is wetted. This operation is best done during a dry time and in the evening.

Herbs.—At this season, many herbs will be ready for gathering. They should be cut, tied in bunches, and hung heads downwards in a dry, open shed, or against a wall in a sunny position. Keep the bunches turned occasionally until quite dry.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Chrysanthemums.—These plants have well filled their receptacles with roots and where large blooms are required it will be found necessary to supply the latter with a stimulant to keep the plants healthy. Several good proprietary manures are to be had and if these are used the maker's direction should be strictly observed. Weak soot water is a safe stimulant for Chrysanthemums and may be used freely, especially for those plants that dry out very quickly. Start feeding with the soot water, and then use weak liquid manure from the stables or cowsheds alternately with a concentrated manure. Liquid manure, may be made by placing horse or cow dung in a bag and soaking it in water for a few days before using the clear liquid. Chrysanthemums delight in a change of food and where those recommended are used good results should be forthcoming. At this period of growth strict attention must be given to disbudding and rubbing out all side shoots. It is also essential to keep all growths tied neatly to stakes or they may easily be broken off by strong winds. Single and bush plants of Chrysanthemums will also need some manurial aid. Soot water and weak liquid manure will be all that is necessary until such time as the buds are taken, when a concentrated fertiliser is necessary to assist them to develop good flowers.

Richardia africana.—Arum Lilies will now require re-potting, where early spathes are required. If the plants have been rested as previously advised they should have the old soil shaken from the roots before they are potted. Select the strongest crowns for the early batch, while those of the next size may be planted out in a rich compost with a view to placing them in pots, or for lifting and planting them out in borders. The latter method is gaining favour and is practised by market growers and in establishments where large quantities of flowers are required. A suitable compost for those that are to be grown in pots consists of three parts turfy loam and one part well-decomposed cow or horse manure with broken charcoal and sand added to ensure a free passage of water. The Arum Lily when in full growth requires almost an unlimited supply of water, therefore it is essential that good drainage should be provided. Immediately after re-potting extra care is necessary in watering until such time as the young roots are active in the new compost. In view of this it is advisable to stand the newly-potted plants where they may receive protection from heavy rains. Later, they should be placed in a sunny situation and grown on quite hardily until frost threatens, when they should be housed for the winter.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford,
Wrotham Park, Barnet, Middlesex.

Strawberry Beds.—All plants that have been cleared of their fruits should, with the exception of those intended to supply runners for stock, be divested of the old, exhausted leaves and runners. Weeds and the straw litter should then be cleared away and the soil between the plants lightly pricked up with the fork. This is very necessary where the land is heavy and retentive to prevent it from cracking after much trampling on in wet weather followed by bright sunshine. After the beds have been cleaned and put in order dress the rows with soot and decayed manure, more or less, according to the nature and condition of the soil. Beds older than three years, unless there are special reasons for retaining them, should be grubbed up and the land utilised for some other crop. In deep and fertile soils, with reasonable attention, Strawberry plants will crop well for a number of years, but in the majority of cases three years is quite long enough to retain them.

Hautbois Strawberry.—The peculiar flavour of this Strawberry is greatly appreciated by many and it was at one time planted extensively in private gardens. It should be grown on a partially-shaded border. Set the runners about eighteen by twelve inches apart in soil of moderate richness.

Autumn-fruiting Raspberries.—In favourable seasons very good crops of Raspberries may be obtained from the autumn-fruiting varieties, the canes of which should not be too crowded. Young, weak canes and any that are not likely to bear freely should be pulled out so that those fruiting may be exposed to light and air. Keep down weeds and apply a mulch of decayed manure, especially where the soil is light. Protect the beds early from birds where these are troublesome to the crop.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P.,
Ford Manor, Lingfield, Surrey.

Late Vineries.—The temperature of late vineries should be 70° at night and 80° to 85° by day, rising to 90° after closing the house, with sun-heat, provided there is plenty of moisture in the atmosphere. The general thinning of the bunches having been finished, examine the bunches again carefully and remove any stoneless berries that may have been overlooked to give more room where there is a possibility of the berries "binding." The roots may be given plenty of warm, diluted liquid manure and an occasional sprinkling of vine manure, guano or soot, as Muscat vines in good health are gross feeders. Keep a sharp watch for scalding at the stoning stage. If the weather is favourable for ventilating freely, scalding may not occur, but it is always wise to keep the house warm and airy at night and ventilated freely in the daytime; as a rule, this steady, warm treatment for a fortnight will prevent scalding.

Late Houses.—Very late Grapes, the bunches of which have been extra well thinned to enable them to hang long on the vines in the winter, will now derive great benefit by being kept extra warm at night, and the vinery ventilated freely through the day until the berries have finished stoning, especially Lady Downes, which is a most troublesome variety. Grapes always scald most under sudden alternation of the temperature through changes in the weather, but rarely when the external temperature is steady. High night temperatures may be maintained as for Muscats, and if sun-heat be insufficient, fire-heat should be used through the night to prevent condensation of moisture and help to increase the size and colour of the berries, which double the amount of warmth will not give later in the autumn.

Late Figs.—Fig trees in late houses with fruits swelling or ripening should be kept moderately moist at the roots, and the stems, walls and floors damped freely on bright mornings. Water, however, should not be allowed to touch the fruits or foliage, as an excess of moisture, especially when the lights are closed would result in the fruits splitting. Late trees which produce only one good crop, and that only by the aid of sun heat, should not be pinched as second growths rarely ripen. The shoots should be trained thinly on the extension principle and when they reach the limit of the house may be cut out to make room for others. The secret of success with late Figs consists in keeping the young growths short jointed, by no means gross, and trained well apart. Many trees that are making extra strong growths should be root-pruned by the end of September.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Lavender.—Where the flower spikes are required for drying, they should be cut in their prime. In common with other flowers and leaves used for making pot-pourri, they should not be dried in the sun, but under cover in a cool, airy building; if dried in the sun they become hard and brittle and quickly crumble to pieces. When properly dried, the Lavender flowers should be stripped off and placed in small bags or pillows.

Colchicum autumnale.—There are several varieties of this plant, and they are ideal subjects for planting in grassy places in the wild garden, where they look much better than in formal beds or borders, for, unless they are carpeted with some dwarf evergreen subject, their flowers become splashed and spoiled with soil during heavy rains. Some of the choicer species and varieties of Colchicum are suitable for planting in the rock garden, where they may be associated with dwarf, evergreen, carpeting plants. Although the individual flowers do not last long, they are, as a rule, produced in succession over a long period. Colchicums, especially the autumn-flowering species, should be planted so soon as they are received from the bulb merchant. In addition to C. autumnale and it varieties, other good kinds are C. Parkinsonii, C. Bornmulleri, C. cilicicum, C. giganteum, C. montanum, C. variegatum and C. speciosum.

Lilium candidum.—Where it is intended to plant or replant this beautiful Lily it is important that the work should be done during August or at the latest early in September, for this Lily commences to make its growth at that time. This species succeeds in a good medium loam and being a lime lover, a dressing of old mortar rubble, or failing this, lime should be added to the soil. A dressing of basic slag applied at the rate of 6 ozs. to 8 ozs. per square yard may be used instead of lime. A sunny open situation with some shelter from cold winds during early spring, is best suited to the successful cultivation of this Lily. Shallow planting is also essential; the top of the bulbs should not be covered with more than two inches of soil, they will then gradually raise themselves to the surface. In most cases when this Lily is really doing well the bulbs are exposed on the surface of the soil. The plants suffer much from attacks of Botrytis cinerea, which ruins the foliage and in bad cases may affect the bulbs. As a preventive it is a good plan, when lifting the bulbs, to dry them for a few days, and then dust them thoroughly with flowers of sulphur before replanting them. During the growing season they should be sprayed several times with liver of sulphur at the rate of one oz. of the specific to three gallons of water. A little soft soap added to the mixture will render it more adhesive.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Clearing Strawberries.—Where the older plantations of Strawberries have passed their useful stage, the plants may now be dug up and the ground utilised for other crops, such as late Broccoli. The soil for this crop will not require much preparation; the surface should be stirred deeply with the Dutch hoe or other cultivator, thus leaving a surface loose with a firm root-run beneath, under which conditions late Broccoli may be expected to make short-jointed growth and be able to withstand the winter. If layers of the Strawberries are plentiful, sufficient young plants should be secured early to provide plants for forcing next season, either by layering them direct in small pots or into pieces of turf. See that the runners are regularly supplied with water in dry weather.

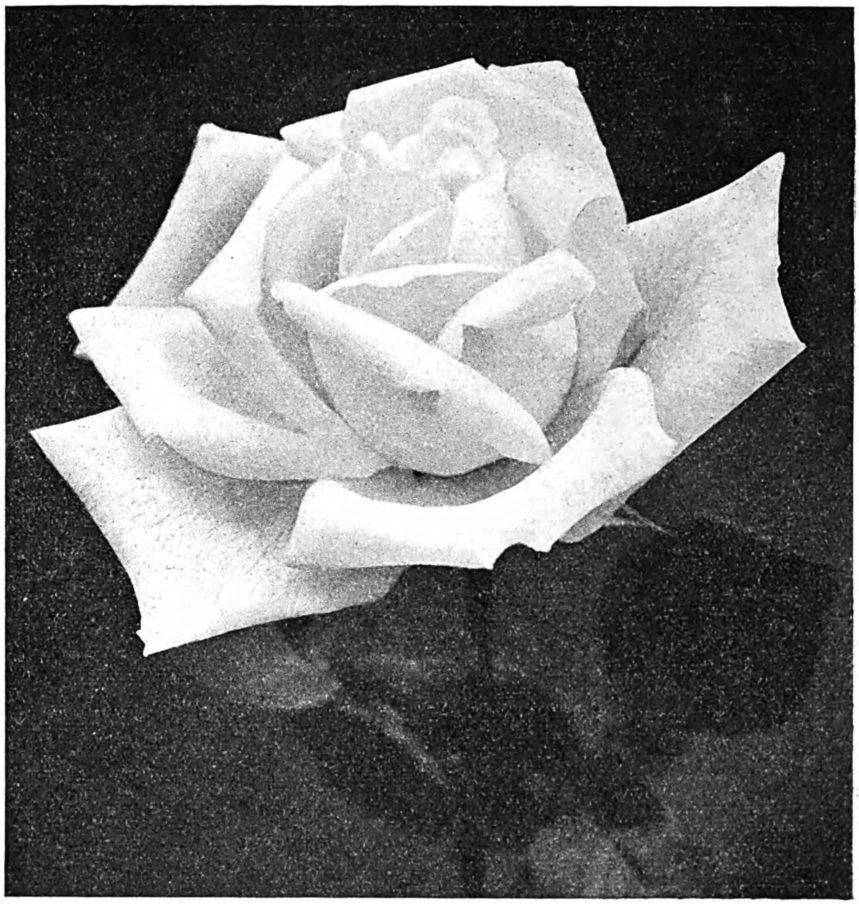

FIG. 32.—ROSE MARGARET ANNE BAXTER.
N.R.S. Gold Medal, July 15. Flowers white. Shown by Messrs. T. Smith and Son.
(see p. 76).

Bearded Irises.—The present is a most suitable time to divide and replant all the members of this popular section of Iris. Where the plants have been growing on the same site for several years they tend to become infested with some of our worst perennial weeds, such as "Goutweed" (Agopodium podagraria), and the opportunity should be taken, when dividing them, to get rid of this pest. In the case of very old clumps, the rhizomes spread outwards leaving the centre of the clump almost bare; these central parts are thoroughly exhausted and should be removed, reserving only the outer sections for replanting. If a new site can be found for these Irises, so much the better, but if from force of circumstances they must be replanted on the old site, the ground should be deeply dug, cleaned and manured, and made firm by treading before replanting. It is a mistake to plant the creeping rhizomes deeply; lay them along the ground, cover lightly with soil and peg them down to prevent movement until new roots have formed. In many gardens these Irises do not flower so freely as they might because, from some mistaken idea, they are often planted in shaded places, where they grow freely enough but give very few flowers. They are best planted in the open where they will receive their full share of sunlight.

Hydrangea Hortensis.—The many charming varieties of this old plant which have been raised during late years are all readily propagated by cuttings of half-ripened shoots inserted in sandy soil and shaded for a time. These, if placed singly in small pots and given a slight bottom heat, soon become established, and may then be grown on, either as single-stemmed specimens, or made to carry three or four smaller heads as desired. The colouring seen at exhibitions is most attractive, but I am afraid many purchasers must have been disappointed with their own results when growing them in the ordinary way, without the assistance of one or other of the powders which are used to produce or rather, intensify, these colours. Many varieties of Hydrangeas are quite hardy out-of-doors in the West and form large bushes several yards in diameter, which carry hundreds of flower-heads each autumn, and if these newer varieties could be grown in the same manner and come true to colour, the effect would be wonderful. Imagine, for instance, a large lawn group of well developed specimens of the comparatively new and brilliantly coloured variety Parsifal, in full bloom!

ALPINE GARDEN.

SILENE HOOKERI.

This beautiful species comes from California, and is a first-rate rock-garden plant. It has a fleshy, Carrot-like underground root, from the crown of which radiate a number of straggling, prostrate stems carrying large, handsome blossoms of a clear, soft pink. Each of the five petals is deeply slashed into four narrow segments, and each flower is about an inch-and-a-half in diameter, so that a well-flowered specimen is uncommonly showy and beautiful. Grown in the open rock garden, Silene Hookeri should be given a deep root-run in a light, rich, gritty loam or moraine and a warm, sunny position. The best means of propagation is by seeds.

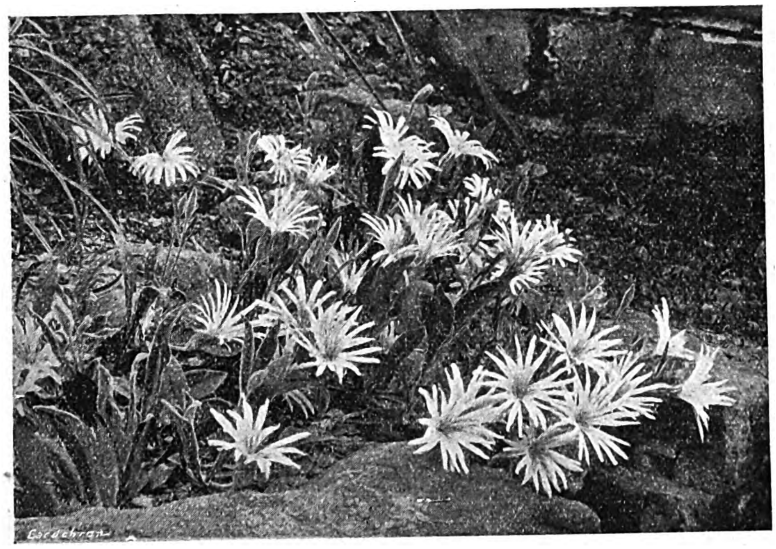

FIG. 33.—SILENE HOOKERI.

Silene Hookeri is especially good as an alpine-house specimen. Here it may be grown either in a pan or a pot, or planted out. Late last June, I visited Mrs. Walter Jones' interesting garden at Aberuchill Castle, in Perthshire. Here, under Mr. Brooker's skilful care, is one of the most successful alpine houses I have yet seen. It is a span-roof house specially built for the purpose. On one side of the central path is staging, with alpines grown in pans and pots, whilst the other side of the house is treated as a permanent rock bank. Here many choice and otherwise difficult alpines were growing to perfection, and Silene Hookeri was so astonishingly fine that I took the accompanying photograph (Fig. 33) of it. The large blossoms, fringed, and of a peculiarly lovely rose-pink, sitting close upon the ground, were a most beautiful sight. *Clarence Elliott, Stevenage.*

VERBENA RADICANS.

This distinct species is a useful plant for clothing hot, dry banks or for planting at the base of shrubs on the rock garden. Of prostrate habit, it forms a close, leafy carpet of long growths which produce roots at practically every node.

It was introduced from Chile, according to Paxton, in 1832, and is included in the list of South American Verbenas in Hooker's *Botanical Miscellany*, Vol. 1, though it is seldom referred to in the standard horticultural works, and then only as a greenhouse plant. Yet it flourishes and winters well in the open garden, provided it has a warm, dry position and rather light soil, for if planted in soil of heavy texture, it becomes rampant, producing an excessive amount of growth but very few flowers, and invariably dying out during the winter.

The leaves are divided into very narrow segments and are produced in pairs, while the flowers are borne in short spikes on stems about four inches long arising from the axils of the leaves or terminating the growths. They are lilac in colour and sweetly scented, the corolla tubes being about twice the length of the hairy calyces, at the base of which are small, lanceolate bracts.

ACANTHOLIMON VENUSTUM.

This lovely Prickly Thrift is infinitely more attractive than the well-known A. glumaceum, which is to be found in practically every rock garden. It forms close cushions of rosettes of stiff, lime-encrusted, greyish-green leaves, which are about one inch in length, very narrow and sharply pointed.

The flowers are larger than those of A. glumaceum, and are of a rich rose colour, borne on wiry stems in loose sprays about three inches in length, the corollas protruding from yellowish-brown, funnel-shaped calyces of paper-like texture.

The species is a native of Asia Minor and should be planted in a hot, dry position, preferably in a sunny crevice containing light, loamy soil, to which an abundance of limestone chips and small pieces of rock have been added. It is advisable to cover the plant with a sheet of glass during the winter in an endeavour to keep it as dry as possible. *A. G. F.*

FLORISTS' FLOWERS.

BORDER CARNATIONS.

The best method of increasing border Carnations is by layering, and now is the best time to do this. Although in some favoured districts certain strong-growing varieties will bloom for several years and make large clumps, it is best to raise new stock annually. The operation is quite simple and well understood, although success depends very largely on the skill of the operator, especially when dealing with varieties with thin or short "grass," as the shoots are commonly called.

One common mistake in layering Carnations is the placing of fine compost in the form of a mound on the top of the ground; the best way is to draw away a portion of the soil from around the plant and to place the prepared compost in the depression.

The tongue of the layered shoot should be carefully pushed straight down into the fine compost, and the shoot pegged into position with the foliar end of the layer upright; the soil drawn from the plant should then be put over the fine compost, and this should not be much, if any, above the ground level. Any necessary watering is then more easily done, and the covering of soil over the fine compost prevents, to a large extent, birds from scratching in it. *C.*

INDOOR PLANTS.

ERANTHEMUM PULCHELLUM.

The subject of this note is undoubtedly one of the very best winter-flowering stove plants. It was first introduced to this country from the East Indies in the year 1796, and has been known by several different names, such as E. nervosum and Daedalacanthus nervosus, while it is figured in *Bot. Mag.*, t. 1358, under the name of Justicia nervosa.

E. pulchellum is of bushy habit and produces its intensely blue flowers during the winter and early spring. The flowers, which are borne in terminal and axillary spikes, open in gradual succession from below upwards, thus the plants remain in beauty for several weeks.

Cultural requirements are not exacting. Cuttings should be inserted in a sandy compost in March, and placed in a propagating case, with a fairly brisk bottom-heat. When rooted, remove them from the case, and in due course pot them on as requirements necessitate. Pots having a diameter of six inches or seven inches will be large enough for the final potting. The potting compost should consist of equal parts of peat and good fibrous loam with a liberal quantity of sharp silver sand. When the larger pots are well filled with roots frequent applications of weak liquid manure or soot-water will be found highly beneficial.

From the time the rooted cuttings are removed from the propagating case until July the plants should be grown in a stove temperature and as near the glass as possible. They may then be gradually hardened off and removed to a warm pit and remain there for the summer months.

During the early stages of growth the shoots should be pinched several times to promote a bushy habit; at all times they require shade from bright sunshine. Syringe the foliage freely during the growing season and guard against attacks of green fly, thrips and red spider. A shelf or side-stage near the roof-glass, in the stove, affords the best position for plants that are to flower.

After flowering, cut back the stems and place the plants in a position where they will be encouraged to produce strong growths suitable for cuttings. Old plants may be grown on a second year, but they are never so fine as young stock. *H. T.*

CHIRONIA IXIFERA.

This desirable South African plant is very useful for furnishing the stages of the cool conservatory or plant house. That it may be grown to considerable size is indicated by the specimens exhibited at leading flower shows in pre-war days.

Chironia ixifera thrives in a compost of peat and loam rendered porous by the free addition of sharp sand. Over-potting is a frequent cause of failure with Chironias; perfect drainage is of the utmost importance. Cuttings obtained in spring offer a ready means of increase, and the plants commence to flower when in a small state. Watering needs most careful attention at all periods, and especially during winter.

The rose-pink flowers are terminal, the corolla salver-shaped, with a narrow tube and a spreading limb, which is longer than the tube; the leaves are sessile, opposite, ; the stem is thin, somewhat wiry, simple or branched. A group of well-flowered plants is a noteworthy feature in a cool plant house. *Ralph E. Arnold.*

SARMIENTA REPENS.

This decidedly pretty and somewhat uncommon little Gesnerad is not always tractable, but should succeed if grown in a shallow, well-drained pan containing a compost of chopped fibre or peat and Sphagnum-moss, with a little sharp sand and charcoal; abundance of water and a moist atmosphere are essentials as also is shade from strong sunshine. A cool Orchid house generally proves a suitable place for this attractive little plant.

The wiry, creeping stems are clothed with opposite, small and somewhat succulent leaves, very slightly indented or toothed; the flowers, produced in summer, are solitary in the axils, and of bright scarlet colouring.

Alternative cultural methods which have proved successful are those of wiring the plant to the stem of a tree Fern, or growing it in an Orchid basket suspended from the roof of a cool greenhouse.

It is a little plant well worth the perseverance of cultivators. Introduced from Chili in 1862, the generic name commemorates Mart. Sarmiento, a Spanish botanist. Sarmienta is a monotypic genus. *Ralph E. Arnold.*

ORCHID NOTES AND GLEANINGS.

TRICHOPILIAS.

This genus includes some fifteen species, and two of them—T. laxa and T. fragrans—were formerly known as Pilumnas.

Trichopilias may be grown in pots, in teak baskets or in shallow pans; many cultivators prefer the latter on account of the facility with which they may be suspended near the glass, where the plants will receive so much light as possible during the short, dull days of our changeable climate. The various species of this interesting genus produce their flowers at different seasons of the year, but it will be quite safe, no matter which species it is, to do any necessary repotting when the new growth is about half made and about to emit new roots. They succeed in a similar material to that used for Sophronitis.

Trichopilias usually have flattish or elongated pseudo-bulbs, which bear a single, leathery leaf. The short scapes, produced from the base of the pseudo-bulbs, are usually pendulous, though sometimes erect. At all times water must be carefully given, and after growth is completed but little is required.

T. brevis, T. coccinea and its varieties, T. laxa, T. Galeottiana, T. punctata, T. rostrata, T. suavis, T. suavis alba and T. tortilis all succeed in an intermediate-house temperature.

T. fragrans and its varieties, T. sanguinolenta (also known as Helcia sanguinolenta), and T. Backhousiana succeed at the warm end of the cool Odontoglossum house.

Most of the better known species have large, showy, interesting flowers, and are well worth cultivating. There is one hybrid Trichopilia, T. Gouldii, raised by Messrs. Charlesworth and Co. in 1911, by crossing T. suavis with T. fragrans.

PLATYCLINIS FILIFORMIS.

This pretty plant is known as the Golden Chain Orchid, because it has drooping spikes of small, golden-yellow flowers. It should be repotted soon after it has passed out of flower, and so soon as new roots appear at the bases of the partly developed growths. This Orchid is best grown in pans suspended from the roof in a shady position in a house where a warm, humid atmosphere is maintained, as the whole family are natives of a moist region lying within the equatorial zone. The usual precaution as regards the application of water to newly potted plants is most necessary as the young growths of Platyclinis may damp off if water is applied too freely.

Frequent spraying of the foliage—especially the undersides of the leaves, through the growing season is beneficial—and is a means of preventing attacks of red spider, which occur if a dry atmosphere is maintained.

The usual open, fibrous material, cut up into rather small portions, answers the requirements of this Orchid in regard to potting material. *J. T. B.*

STANHOPEA WARDII.

Stanhopeas are seen so rarely nowadays that a flowering specimen is worthy of note. A few days ago I saw S. Wardii flowering in Messrs. J. Cypher and Son's nurseries at Cheltenham, where the large, pendant flowers attracted at great deal of attention by reason of their fragrance and their brilliant colouring—a combination of golden-yellow, orange, red-purple and maroon. *C.*

IRIS GARDEN.

SOME IRISES IN SCOTLAND.

It is one of the drawbacks of spending the months of May and June in Essex that I generally miss the "full bloom" of the small collection of bearded Iris which I grow at Duddingston. Mr. Logan's notes on outstanding varieties in *The Gardeners' Chronicle*, of July 9, sent me back to mine to make a few notes of what remained in flower here on July 10.

The outstanding feature was a thirty-foot line of large clumps of Ambassadeur. It is admired by everyone and had been cut largely for friends and for house decoration, but between fifty and sixty spikes remained, and these were all over four-and-a-half feet tall, mostly with three glorious flowers (see Fig. 34). Adjoining, is a similar line of Lord of June, but on it only a dozen very large flowers remained. Next is a line of Souvenir de Madame Gaudichau; it had even fewer blooms that Lord of June—only a very few left to remind one how wise I was three years ago to plant so many of it. Dominion I had to move late in the season, and it did not bloom so well as the others, but I was glad to see some of its wonderful flowers, so rich in colour and so thick in substance— or "cloth" as the old Scotch florists called substance.

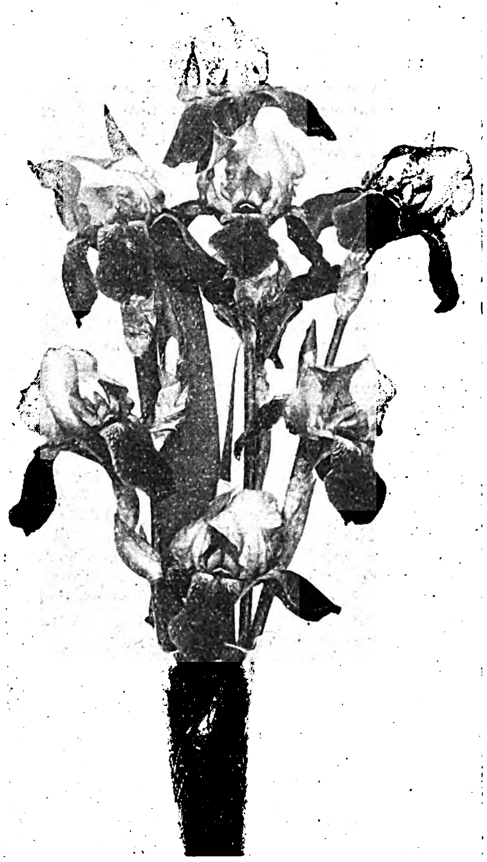
FIG. 34.—IRIS AMBASSADEUR.

The outside line of this bed consists of Benbow, still largely in flower on July 10, a much admired Iris; Duke of Bedford, Swazi, Lord Lambourne, Bruno and Mrs. Cuthbertson had only a few flowers left here and there to welcome me—their glory had departed for the season.

Three years ago I discarded many old sorts, but of the older varieties that I like I put a clump in a mixed border, and the following were still in bloom on the date mentioned:—Richard II, which I like on account of its distinct white edging to its deep violet falls; Opera, Ringdove, Shelford, Chieftain, Corida, Afterglow, Trojana, Eldorado, Asia, Magnifica and the quaint ochracea-coerulea. All others had passed out of flower. *Wm. Cuthbertson, Duddingston, Midlothian.*

IRIS DELAVAYI.

This beautiful Iris is a member of the sibirica sub-section, but it is a larger and bolder plant than any of the so-called Siberian Irises.

It is especially useful, inasmuch as it comes into bloom just as the latter passes, but I do not find it free-flowering. In the bog, for which it is so frequently recommended, it grows vigorously but flowers sparingly. Given a wet season, such as the present, it affords a much better show in the ordinary border. I feel, therefore, that, with me, at any rate, I. Delavayi is best grown as a border Iris, giving the roots a liberal top-dressing of some retentive material in spring, and following this up with waterings as required.

The foliage of I. Delavayi is taller, broader and stiffer than that of I. sibirica, attaining to three or four feet. The flowers, which are carried erect, well above the leaves, are a rich plum purple with a white blotch on the falls.

IRIS JAPONICA, LEDGER'S VARIETY.

This form of Iris japonica is said to be very much hardier than the type. In my comparatively mild climate and well-drained soil neither of them ever suffered to any extent from frost, but up to a few years ago they flowered unsatisfactorily or not at all. Ledger's variety in particular made enormous growth, quickly covering such wide patches that it was dug up and thrown away by the barrowful. One autumn I took up some roots, put them in a large pot and stood the pot against a north wall where the soil became very dry and the plants exposed to a considerable amount of frost. The following April or May these pot plants, having been sunk to the rim and well watered, at once broke into bloom and continued flowering until July. It is evident that not only was winter rest desirable, but root-restriction, for having provided these two I am never without an abundance of blossom.

The leaves of I. japonica are broad, dark green and glossy. They rise in fan-like tufts from narrow, greenish rhizomes, and are about one foot long. Except for their much deeper green, they are very like those of I. tectorum. The flowers, borne on elegant sprays, are about one inch across. They open flatly after the manner of those of I. gracilipes, and are a very pale lavender, often almost white, fretted with small flecks of blue, or blue-purple. Instead of a beard there is a white crest, tipped with orange. The falls are beautifully waved and jagged at the margins, and this, in combination with the soft and delicate colouring, gives the blossoms a likeness to a piece of old chintz. I grew I. japonica in poor, stony soil in full sun. *A. T. J., North Wales.*

HARDY FLOWER BORDER.

OENOTHERA FRUTICOSA.

Of the numerous yellow flowered Oenotheras, this is one of the most attractive. It is a hardy herbaceous perennial, producing erect, branching red-tinted stems, two or more feet high, clothed with ovate and lanceolate, denticulate leaves.

The flowers, which are produced in leafy racemes during July, are deep yellow and about an inch-and-a-half in diameter; they open during the evening and remain attractive throughout the day.

The variety O. Youngii is, perhaps, more desirable than the type, being very free in growth and of a more compact, bushy habit, with bright, pale yellow flowers and large, glossy leaves. *A. G. F.*

LOBELIA TUPA.

Also known as Tupa Feuillei, this is a noble herbaceous plant which may be strongly recommended for a sunny position where a bold subject is desired for flowering from July to September. Though a native of Chili and possessing a reputation for tenderness, I have found L. Tupa absolutely hardy. One plant is growing in a free, deep loam, and is frequently subjected to 10° to 15° of frost, but it has never suffered the slightest injury. In colder soil and bleaker localities it is said to be reliable only when covered with a mound of ashes during the winter, but my plants are never given any protection.

L. Tupa was introduced to this country over one hundred years ago. It is a robust and vigorous plant, soon making a big mass six feet in height and nearly as much across. The Foxglove-like leaves are tinted with red along the mid-rib, as are the stems, and the latter terminate in showy spikes of reddish-crimson flowers which, as I have stated, extend over several months.

Increase is easily effected by division. This Lobelia is said to be a good sea-side plant. *A. T. J., North Wales.*

CHELONE BARBATA.

This old-fashioned, hardy perennial, listed in many books and catalogues as Pentstemon barbatus, is a member of the Scrophulariaceae, and was introduced so long ago as 1752.

Considering the comparative ease with which it may be raised, and the splendid show it is capable of producing, it is surprising that it is not found more frequently in our English gardens.

The plants themselves are of a neat, tufted habit, having somewhat leathery leaves, lanceolate or linear-lanceolate in shape, and three to five inches in length, the cauline leaves being sessile. Towards the end of June the imbricated spikes are produced on stout stalks, sometimes five feet in length, along which a succession of dainty, bright coral-red to carmine flowers is borne on twiggy panicles. The lower lip of the corolla is deflexed and bears a bright yellow beard at the throat, whilst the inside is striped with dark red.

Chelone barbata is very easy to cultivate in any ordinary garden soil, and like most herbaceous plants amply repays any manurial additions to the soil. Seeds may be sown under glass in March to produce plants to flower the following autumn; or they may be sown outside or in a cold frame in a prepared bed from April to August. Plants may also be increased by division in autumn. *R. K.*

SPIRAEA UMBROSA FLORE PLENO.

The double-flowered form of our common Meadowsweet is one of those plants which has to be known before one realises its merits. It is as superior in its own way to the type as the double-flowered S. Filipendula is to the single. The flowers, borne in very large inflorescences, are much whiter than those of ordinary Meadowsweet, the foliage is rather broader and denser, and while the plant does not grow too tall and lanky it will, when well-established, throw up an armful of sturdy stems.

Another point in its favour is that it does not seed and become the nuisance which the wild plant is liable to be. I find Spiraea umbrosa flore pleno a first-rate subject for grouping along with plants of its allies—Astilbe Davidii for example—which are the better for a companion of a milder hue on account of the ferocity of their colours. It is easily grown almost anywhere, even in shade, but naturally prefers a moist, rich soil with full exposure. *A. T. J.*

GENTIANA LUTEA.

This species is of bold and distinctive character, handsome in foliage or in flower, although not possessing the pure loveliness of its more beautiful congeners. The radical leaves are ovate-oblong, the cauline ones sessile, ovate, acute, The flowers are verticillate, the corolla yellow, veined and spotted, and the average height of the stems is round about three feet; occasionally, however, a plant will attain to even greater proportions in a favoured border where leaf-mould is present. The flowers appear in summer.

Gentiana lutea thrives in a woodland soil, in sun or half shade, and is an ideal subject for the wild garden or where woodland meets garden, and even when not in flower the large leaves will invite and merit considerable attention; frequent disturbance is inimical to the plant's welfare.

A very old plant in gardens, G. lutea was introduced so long ago as 1596; it provides the Gentian Root of commerce. *Ralph E. Arnold.*

FLOWER GARDEN.

KOCHIA TRICHOPHYLLA.

This handsome-foliaged plant has been well named the Summer Cypress, as it has the general appearance of a diminutive Cupressus. It is a half-hardy annual about 2½ feet high and as a "dot" plant in large beds has much to commend it. It also associates well with such dwarf subjects as Begonias and Nemesias. The delicate light-green foliage assumes a beautiful crimson tint in autumn, gradually changing to brown as it dies. To obtain good specimens seed should be sown in brisk heat, during February and the seedlings transferred to a cooler house at an early stage and placed in small pots in fairly light soil so soon as large enough. After potting afford these a position near the roof glass of the greenhouse.

Planting out should take place in June, allowing ample room for development and, where possible, selecting a site away from trees, walls, etc., in order to ensure that perfect symmetry this subject attains in the open.

Kochia trichophylla is useful as a pot plant for the conservatory or as single specimens on terraces, whilst sprays of its foliage may be utilised with pleasing effect in vases, in association with suitable flowers. *E. J. Bryant.*

SALVIA PITTIERI.

This, certainly one of the best of the Sages, is, unfortunately, not hardy; it is, however, exceedingly beautiful when planted in a cold greenhouse, or the plants used for the embellishment of the summer garden. A supply of plants for the ensuing season may be obtained by rooting cuttings in the late summer and early autumn. As a permanent subject, this delightful plant may be tried at the base of a south or south-west wall and afforded protection during the winter months; it is much less tender than S. splendens and should certainly be afforded every facility for permanently gracing the garden with its vivid, blood-red flowers, which are produced in great profusion throughout the summer and are of velvet-like texture. The flower spikes are several inches in length and the foliage is of a lovely and refreshing green colour.

A position in full sunshine and plenty of moisture at the roots are essentials required by this brilliantly-coloured Sage from Costa Rica. *Ralph E. Arnold.*

BULB GARDEN.

FRITILLARIA ARMENA.

A learned pundit tells us that the little Snake's Head Lily generally known as Fritillaria armena, should be termed F. Sibthorpiana, but it is usually offered in catalogues as F. armena. It is a delightful plant with cone-shaped bells of yellow. It is only a few inches high and the flowers droop elegantly. It is hardy, although, like some of the other Fritillarias, it has ways of its own, difficult to find out, and may die off if not happy. It is not expensive to purchase, and those who wish to try it may do so without a big strain on their finances.

The writer referred to above who casts doubt upon the name, states that the true F. armena has dull purplish flowers. All that I venture to state is that I have had collected bulbs sent me from a reliable source in Asia Minor and from these I had specimens identical in everything except the colour of the flowers, some being yellow, others greenish and others dull purple. The yellow was the most attractive.

Rockwork would appear to be the most suitable abode for this Fritillaria, which is so dwarf that it has little effect elsewhere unless it can be planted by the hundred in grass. *S. Arnott.*

TREES AND SHRUBS.

LILACS.

Lilacs, with their free-flowering propensities, wide range of fine colours and delicious fragrance, are amongst the glories of British gardening in the spring; the noble proportions to which specimens will attain, and their compact, yet free, growth, render these shrubs ideal subjects for park planting, and they are rarely seen to better advantage than when boldly massed and allowed ample room for the full development of each individual specimen. As isolated lawn plants they are difficult to surpass, and a shrubbery or shrub border cannot be considered representative unless it includes some examples of choice Lilacs.

Any ordinary good soil meets the requirements of these accommodating subjects, but like so many other "easy" plants, their health and vigour may be considerably enhanced by a little attention; an annual mulching of well-rotted manure, and the regular removal of all suckers are two simple operations exercising great influence over development and future success.

It is wise to remove the faded inflorescences, at any rate from choice varieties, as these, if allowed to remain, tend to retard the progress of new growth.

Lilacs may be increased by suckers, and for the propagation of choice varieties shield budding may be practised, using a pushing bud in April or a dormant bud in summer; crown grafting or cleft grafting in March is practicable on dwarf or standard stocks. Seedling plants are the best stocks, as they do not produce suckers so freely, but, personally, I think that cuttings offer, perhaps, the best method of propagation, eliminating, as they do, the sucker evil.

When forming a collection, species, of which there are a considerable number, should not be ignored, as many display great beauty allied to distinctive character.

Syringa japonica (syn. Ligustrina amurensis var. japonica) has creamy-white flowers and is a handsome shrub from Japan; S. Josikaea, rosy-lilac, and odourless, is also fine. S. Emodi, with large foliage and purple flowers, came from the Himalayas in 1840, while S. E. elegantissima (syn. variegata) is a most distinctive shrub with soft yellow and green leaves and creamy flowers.

S. persica produces a profusion of small, erect, pale-lilac inflorescences, its massed effect being quite pretty; there is a white form, S. p. alba. This very old plant was introduced from Persia in 1640. S. villosa has rose-pink flowers and came from North China in 1880.

Of the newer species mention must be accorded S. Sargentiana, with large leaves and salmon-rose flowers freely produced; S. Wilsoni, pale pink or mauve-pink; and S. Sweginzowii superba from Central China, with narrow, dull green leaves and long racemes of soft pink or flesh coloured flowers, a very fine species and deliciously fragrant.

S. vulgaris, the common Lilac, has been cultivated in gardens since 1597; it is widely distributed from Central Europe to Persia and displays many varietal forms.

Of the wide range of magnificent garden varieties, the following is a carefully compiled selection of the best forms:—Excellent varieties with single flowers are Congo, red; Gloire de Lorraine, light blue; Marie Legraye, a well-known white; Souvenir de L. Späth, dark red; Mont Blanc, white; Saturnale, bluish-mauve; Hugo Koster, mauve, and Charles X, rosy-purple.

Of varieties with double flowers, a representative collection should include Alphonse Lavallée, blue, shaded violet; Charles Joly, dark red; President Carnot, pale lilac with white centre; President Grevy, blue; Doyen Keteleer, pale pink; Emile Lemoine, pink; Leon Simon, blue, suffused rose; Madame Casimir Perier, pure white, very free; Michael Buchner, rosy-lilac; Edith Cavell, creamy-white; Miss Ellen Willmott, a grand white; President Loubet, carmine-purple; President Viger, mauve; Victor Lemoine, mauve of a clear tint;

Le Gaulois, deep pink; Mathieu De Dombasle, reddish-mauve; and the old favourite white, Madame Lemoine.

There is no need to stress the value of the Lilac as a forcing plant, for it is well-known, an important matter in this connection being the selection of suitable varieties, of which Marie Legraye and Hugo Koster are good types, as are also Charles X and Souvenir de Louis Späth. In conclusion, I may add that of several firms to whom we are indebted for the advancement of the Lilac, the house of Lemoine occupies a high position. *Ralph E. Arnold.*

FORSYTHIA INTERMEDIA.

SAID to be a hybrid between Forsythia suspensa and F. viridissima, the subject of this note has acquired the good points of both those species. Here it is semi-evergreen, and while the branches are quite stiff enough to stand erect, they lack none of the grace of the upright form of F. suspensa. Generally speaking, it flowers immediately after the latter, and the golden-yellow bells are yielded in the greatest profusion along the entire length of the wand-like branches.

This year F. intermedia was in full bloom before the beginning of March, a month earlier its usual date. I grow the shrub in a group entirely in the open, and no pruning back has yet been done, the plants not having attained their full stature, which appears to be about six feet. There are some forms of F. intermedia, var. vitellina and var. spectabilis, for example, in which the colour of the flowers is of a much richer yellow than those of the typical plant, or of F. suspensa. This is a notable distinction in the genus, for the yellow of Forsythias is inclined generally to be weak in tone.

SOME SHRUBBY POTENTILLAS.

ALWAYS the earliest to come into bloom, Potentilla fruticosa var. Veitchii is, perhaps, the best of those with white flowers. It is evergreen, the leaves being a pale grey-green above and glaucous beneath, and the habit of the shrub is shapely and compact. Of slow growth, it does not look like growing to much above two feet in this garden, but it is said to attain double that stature. The flowering season extends for many weeks from mid-April and the almost pure white blossoms are about an inch across. This attractive form was introduced from Western China.

P. f. var. Vilmoriniana is an even more striking shrub than the above, if, indeed, it is not the finest of the whole of the shrubby Potentillas. Its great charms consist of the very silvery leaves, in which there is scarcely a trace of green, the unusually large flowers, which are a soft shade of creamy-ivory, and the profusion with which they are yielded nearly all the summer. This excellent variety grows about four feet tall and is perfectly hardy and easy in any good, light loam in a sunny place.

P. Farreri (of most lists) is a cheerful little shrub, its deeply-cut, fresh-green leafage making a good background for the very bright yellow flowers. But there are many forms of Farrer's Potentilla, at least one being introduced by other collectors. These include a white one that I have not yet seen. P. davurica (glabra) is a dwarf, semi-deciduous species, eighteen inches high, true specimens of which are not common in our gardens. The leaves are distinctly glabrous, the flowers, about one inch across, white, and the habit dense and bushy. This must not be confused with the more prostrate P. mandchurica with grey-green foliage, rather large for the size of the plant, and creamy-white flowers, an excellent rock-garden shrub.

Also hailing from Manchuria is P. arbuscula, apparently another form of P. fruticosa. This has the largest flowers of any of the yellow sorts known to me, and their colour is exceedingly rich and golden. The stems are clothed in a thick brown tomentum; the plant is quite dwarf and often has a tendency towards a trailing habit.

Yet another of very slow growth and which has not exceeded nine inches after many years in this garden, came here named P. f. argentea nana. This is one of the most comely of its race; the semi-deciduous foliage is silvered with silky hairs, the leaf lobes narrow and pointed and the flowers, which first open in April are of a good size and a clear golden-yellow. *A. T. Johnson, Ro Wen, Conway, North Wales.*

PLANTS NEW OR NOTEWORTHY.

MONARDELLA LANCEOLATA.

SOME ten species of Monardella are found in the warmer States of America. They are the Madronella of some authors, and all are but small, diminutive forms of Monarda.

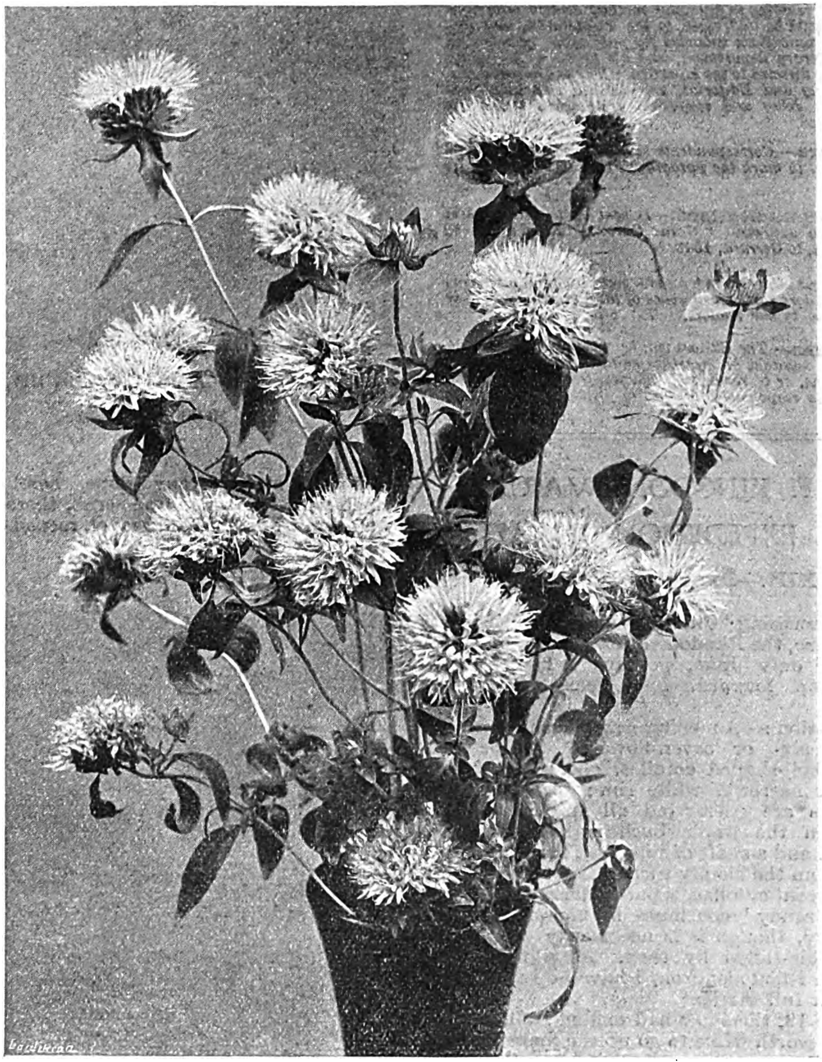

FIG. 35.—MONARDELLA LANCEOLATA.

The genus includes both annual and perennial species, but when considered as perennials they are unsatisfactory here, none being really hardy enough to survive our winters.

One of the most showy is M. macrantha, a very neat little plant with showy scarlet flowers; it is figured in the *Bot. Mag.*, tab. 6,270. Treated as annuals the plants are more satisfactory and have considerable attractions, adding an uncommon note to the annual border.

Seeds of the plant under notice, M. lanceolata (Fig. 35), were sown in early February, and the plants are now in flower. It reaches a height of about a foot and is a very neat, sturdy, erect-growing plant, branching freely, every shoot bearing flowers. The colour is a purplish pink and very effective in a thick group. Most of the species have strongly odorous foliage, some quite fragrant, others not at all pleasing, and M. lanceolata will, in the estimation of some people belong to the latter class.

PENTSTEMON EATONI.

THIS is one of the most desirable and beautiful members of the genus, and being rarely seen in cultivation it was with great pleasure I received seeds of it from an American friend who is keenly interested in Pentstemon species. In his letter accompanying the seeds he writes, "You will like P. Eatoni. I plant it thickly in long rows, and in full sun the effect is wonderful."

While still a long way from having it planted thickly in long rows, this fine plant is doing well in the border, is again in cultivation at Kew, and has been a great attraction in Mr. C. T. Musgrave's garden at Hascombe Place.

It is quite an easy species to grow. The plants were wintered in pots in a cold frame and planted out in April; the central spikes come into flower in early June, and grow to a height of four feet, with many tiers of flowers of the richest vermilion-scarlet; later on many growths start from the base of the plant, all of which will flower later in the season. Good plump pods on the central stem are already giving promise of a good crop of seeds.

It looks as though P. Eatoni will now remain in our gardens where, either in a bed all to itself, or planted in groups in the herbaceous border, it will prove a very noteworthy and attractive addition. *T. Hay, Hyde Park.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA*

XIII.—RHODODENDRONS.

I WAS discussing 'Cherry Brandy,'; I mean, of course, the Rhododendron; and though it is still only June, perhaps I had better make a leap forward, and clear it out of the way.

Specification :—A medium-sized bush, bearing numerous six- or seven-flowered trusses of dangling, bell-shaped corollas, cherry-red with a wider or narrower white rim; occasionally the flowers are cherry-red all through. The effect when the whole bush is beaded with rain drops, and a shaft of sunshine, momentarily released from the cloudy turmoil, smites through the translucent corollas, is particularly beautiful. 'Cherry Brandy' continues in bloom till the end of July, though it is necessarily getting a little draggle-tailed by then. As a medium-sized, bush Rhododendron, I have no hesitation in giving it full marks.

On June 18, the snow had melted sufficiently to make it worth while to go up the main valley towards the pass. After the first abrupt climb, the valley, though quite narrow, was fairly level, and one could cross the torrent almost anywhere by the snow bridge.

The grass slopes, where the snow had just melted, were flooded with the violet Omphalogramma Souliei, which grew here in countless thousands. Unlike any other species I know, it bursts out of the ground in consolidated clumps, and no sooner does the first spear point perforate the soil than it unfurls out of its interior an enormous gaping flower, whose protruding chin almost sweeps the ground. At this time the plant is three or four inches high. The leaves follow, and stem and leaves continue to grow for weeks, the fruit being eventually hoisted up to a height of about eighteen inches. As a rule, the Omphalogrammas occur scattered and not very abundant, though O. Franchetii is fairly numerous in one particular locality on the Mekong-Salween divide, as is O. Delavayi on Imaw Bum; but for sheer reckless Daisies-on-a-lawn profusion, O. Souliei would be hard to beat. Curiously enough, it does not seem to grow in the branch valley, and is extremely rare on the other side of the snow range. So far as our present knowledge of it goes, therefore, it may be written down: 'rare; locally abundant.' It is a near relation of O. Delavayi.

On the right flank of the valley was an almost continuous steep, stony slope, here broadly striped with Rhododendron scrub, there divided by a narrow band of bald gravel, rasped daily by falling stones. On the left flank, however, which was sheltered, precipitous broken cliffs rose to a higher level, and it was only up certain selected chimneys that that side of the valley could be climbed at all.

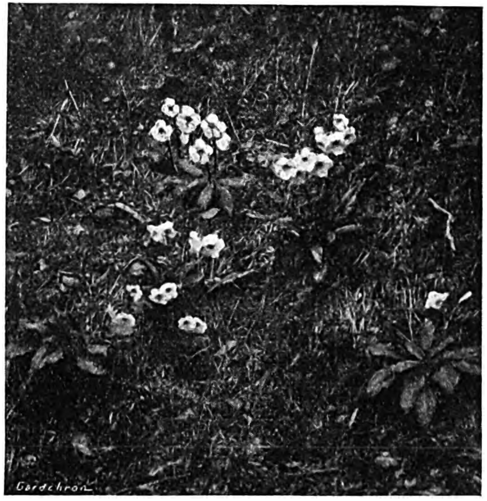

FIG. 36.—PRIMULA MULIENSIS (§ NIVALIS), AT 10,000 FT. ALT.

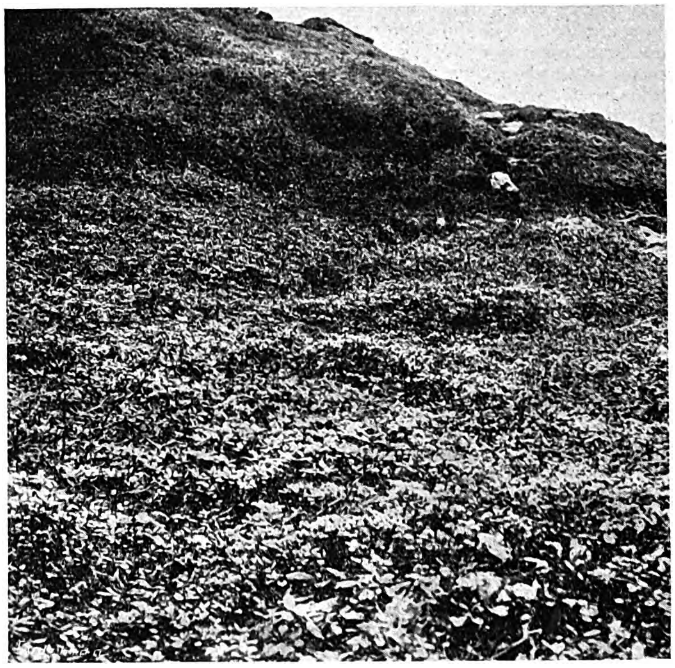

FIG. 37.—A HILLSIDE COVERED WITH RHODODENDRON SCRUB.

Where gravel prevailed, I found 'Pink Baby' (R. pumilum of Sikkim and Tibet—K.W. 5,856), a dainty, dwarf Campylogynum Rhododendron with nodding flowers of a delicious shell pink, perched on very long, slender pedicels. It grew in clumps and colonies on the steep slopes, peeping up between its larger brethren, and doing its best to carpet the barer patches with its witching web. (K.W. 6,961). I consider it the jolliest imp in its class, "just the thing for the home; no rock garden complete without one. Quotations on application!"

Here, too, was the Field of the Cloth of Gold. The common, white-flowered, hairy-leafed, bearded, senile Anemone (one of the Narcissifloras) had suddenly become golden yellow. The 'Golden Anemone' had, in fact, staked a claim a couple of acres in extent on the limestone gravel slope, and well nigh smothered it. There must have been thousands and thousands of plants, all glowing buttercup-golden on this incline, but I never saw the plant again anywhere, another example of the queer localisation of species in the Seinghku valley; Golden Anemone, K.W. 6,956; rare, locally abundant.

Higher up the gravel slope—which turned out to be of crystalline limestone, part of a band of that rock which strikes right across the country, the second of the 'Saluenense' Rhododendrons was found, a charming new species which did not flower till almost the end of June. It forms flat, tense mats, studded with large flowers of a bright rosy pink, which instead of standing well up, almost cuddle the tiny, brittle leaves. 'Limestone Rose' (R. calciphila, K.W. 6,984, 7,069) is a sheer delight, and outcrops of its vivid flowers painting the grey-white cliffs, or lining the scree, added a touch of unusual colour. I give it first-class honours. It is to be noted that it flowers much later than R. rivulare (K.W. 6,903), hardly opening, in fact, until that species is far spent; indeed, 'Limestone Rose' is not at its zenith till about the second week of July. Carboniferous limestone gardeners, please note 'Limestone Rose' as a favourite on the flat.

I seem to be deviating widely from June 18, however, so I had better return to the species then in flower, before running completely amok.

There was the big 'Lacteum' in the dips and hollows of the gravel slope, where it formed substantial thickets. It had long narrow leaves, something like those of R. Bessianum, and large, spherical trusses of white or blush flowers. The copper-red trunk swept off the ground in a gracious curve, and the branches twisted and interlaced so that the shrub attained no great height—twelve feet perhaps; but this device brought all the straying trusses together, and the effect of that frothing flood of flower breaking over the dark sage-green foliage was fine (K.W. 6,953).

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, and June 4, 18, 1927.

Related to the last, but more gnarled and lowly, rising less than three feet above the boulders which it clasped, with smaller leaves bronzed beneath, and paler flowers, was the small 'Lacteum' (K.W. 6,954). It furnished a generous coating of green over the rough ground, streaked with snaky designs in ochre, and dazzle-painted with blobs of white foam. It was while trying to walk on this treacherous surface that I caught sight of 'Scarlet Letter,' which, at first sight, I mistook for a volcano in eruption; though a moment's reflection convinced me that it was quite noiseless enough to be a Rhododendron. 'Scarlet Letter' sprawls over considerable areas on the steep, slope, the stems rising a foot above the rocks and each bearing a close rosette of leaves, dark green above, silver-washed below, upon which bob the seven-flowered trusses. When these open, towards the end of June, the mass takes on the appearance of a lake of molten lava, for the flowers are the most lurid scarlet, and as one by one the buds break into incandescence, more and more of the hillside seems to be involved in this surging conflagration. Certainly I do not know a more aggressive 'Sanguineum' than 'Scarlet Letter' (K.W. 6,955).

About the same time that 'Scarlet Letter' began setting the hillside on fire, the first of three 'Lapponicum' opened its buds. I saw the flowers in the distance, a film of bright purple spread over the usual small-leafed, twiggy brooms. Nothing very remarkable in that, I thought, as I scrambled amongst the dips and crests of the fell towards the new prize. But therein I was wrong. True, the appearance of the plant—foot-high tanglements and tussocks of virgate branches beset with crisp leaves and crowned with purplish flowers—suggested nothing out of the common, and it was not until I had selected a few samples that I discovered the secret. The flowers possessed one property which is unique in my experience of the 'Lapponicum' section, and I have found quite a number; namely, fragrance. The flowers were deliciously, though not powerfully scented. Some specimens, enclosed in a tin box, scented my hut when the box was opened, and ever afterwards the fragrant 'Lapponicum' was watched and guarded with jealous care; luckily it was abundant.

At the beginning of July, the second 'Lapponicum' awoke from its long sleep and put on fine raiment. It was a large, bushy plant, like R. hippophaeoides, sometimes as much as three feet high, and I had watched it anxiously for weeks. There was one plant near my hut, an outlier of the main body; up the valley, below 12,000 feet, there were several thickets; but like all 'Lapponicum' bushlets, it was most at home at about 13,000 feet, where the three of them had the windy fells to themselves. This second 'Lapponicum' then flowered in due course, and created another surprise, for the flowers were of such a deep plum-juice-purple as to look almost black on a dull day, though when the sunlight played on them they twinkled and shone with a metallic glitter. They were very free-flowering, too, and in a mass made a fine display.

The third and last 'Lapponicum' was of the midget type with tiny, golden-scaled leaves, clothing intricate, wiry stems which rambled over the rocks. The flowers were large in proportion, and of a shade intermediate between lavender and violet; superficially, at any rate, this species has less claim to regard than either of the others. Early in July, the rather restricted alpine moorland on the exposed flank of the valley was a rippling lake of purple and violet, where the wind ruffled the broom tops.

At about the same altitude on the sheltered flank were small Rhododendrons of other species—'Scarlet Letter' and the smaller 'Lacteum' yellow or milk-white 'Souliei,' the bushy 'Sanguineum' and the purple 'Saluenense,' which is probably R. humicola, or practically R. saluenense itself. Here and there in favoured localities were mats of the dwarf pink 'R. calciphila' ('Limestone Rose') or clumps of the pretty pale pink R. pumilum ('Pink Baby'). These have been already dealt with.

Two late-flowering species may be mentioned here—the ordinary plum-flowered R. campylogynum, and a pink-flowered 'Souliei.' The former was fairly abundant at 13,000 to 14,000 feet, but much commoner on the other side of the range, where it grew thick and tall, and was in full bloom in the middle of July.

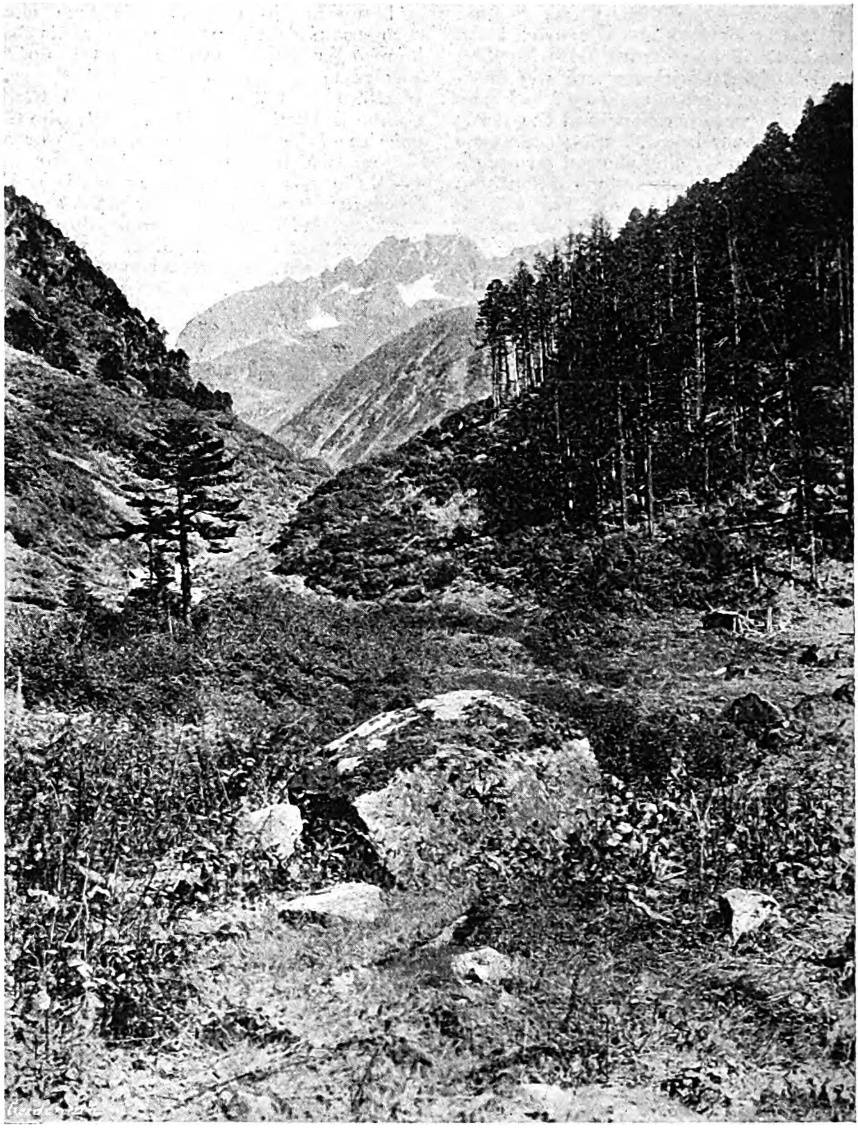

FIG. 38.—SEINGHKU VALLEY; CAMP No. 2, AT 11,000 FT. ALT.

Of the latter, one patch containing perhaps a dozen plants, appeared like a strange comet in the midst of the yellow 'Souliei' and scarlet 'Sanguineum.' It was a beautiful thing, the flowers of a delicious fresh pink, otherwise not unlike the sulphur 'Souliei'—though blooming much later. It was curious how these strange plants outcropped here and there amongst their abundant relatives, and I came to the conclusion that the art of finding new good plants was largely a matter of luck; it depended on whether one had the good fortune to come upon any of these departures from the normal, mutations or hybrids, no doubt, of which there were a fair number scattered about in the choppy sea of 'Souliei,' while in flower; out of flower, many of them were alike as two Peas. *F. Kingdon Ward.*

THE ART OF OBSERVATION.

THE gardener and florist, the botanist and nature student enjoy one advantage over many of their fellows. Each has learned to keep an open eye. For the successful pursuit of his calling he must needs be observant, and this habit of noting things which many pass by with indifference stands him in good stead when he is permitted to enjoy the luxury of travel. I am not now writing of experts, such as Captain Kingdon Ward, whose delightful descriptions in *The Gardeners' Chronicle* must fascinate all lovers of nature and of the East. The explorer and scientific investigator have usually had a special course of training and instruction, and therefore stand in a class apart. Until quite recent years, however, the naturalist was self-taught. He was in the true sense of the word an amateur, and was always demonstrating the truth that love begets the open vision. Thus, love for his subject did for him that which the University course is supposed to do for other students.

Down the golden haze which envelops my memories of the past half-century, thought carries me back to a notable morning in 1877. I had gone on board the river steamer plying between Hongkong and Canton, and was standing on deck admiring the scene as it lay bathed in the sunshine, when I was accosted by a fellow-traveller. He was a Hungarian, a *privat-docent* in Budapest, and was taking a year's leave of absence in order to study life and nature in the Far East. Drawing my attention to some Pines growing on the left or northern bank of the Pearly River, he began to talk of the flora of China, the charm of the tropics, and the things he had seen in the Malay Archipelago. I then discovered how much it was possible for a traveller to observe and learn even while passing through a strange country, and was the more interested because it was very rarely that any of my fellow travellers shared in or reciprocated my appreciation of these things.

At that time I happened to be somewhat intimately associated with two missionaries then resident in Canton, the one an American the other English. The former was a keen naturalist, the latter had not a spark of the artistic instinct. I once travelled with him for a fortnight in a district where the kingfisher reminded one of a casket of priceless gems, the flowers were gorgeous and the Ferns profuse; yet I never heard, during the whole time, one single word which showed an appreciation of the charms and attractions of Southern China. The American, however, has left us more than one volume packed with description, illustration and first-hand information respecting the plants and insects, animals and races of the mainland and adjacent islands, teeming with interest; the Englishman lived to a ripe old age and passed away without bequeathing a solitary reflection or word-picture to posterity. All his long years of residence in a land which has unbounded attractions made no impression so deep that he felt impelled to place it on record.

Another experience akin to the foregoing comes to mind by the law of association. I applied, on one occasion, to a friend who was then residing in Nanking for a collection of plants typical of the district. He was a philosopher, indeed, but no botanist, and great was my disappointment to find, when the parcel arrived, that it contained a set of "Weeds of Civilisation," such as one finds everywhere. There was only one native plant, but that of such interest and beauty that it served merely to intensify the feeling of disappointment which the weeds produced. Yet when I applied to another correspondent in a more southerly district he at once "spotted" the plants which he knew would be of special interest, and sent me a parcel of well-pressed specimens which gave me great delight. The one had never learned to observe, the other was keen-eyed in regard to everything calculated to develop one's knowledge of nature. How great the loss of the former, how intense the enjoyment of the latter!

In all probability the artist and the nature lover profit beyond all others as they pass from place to place. Theirs is the trained eye, and theirs the gift of swift discernment. As they are mentally near of kin, I will regard them for the purposes of our present study as being bracketed, so that what is true of the one may largely apply to the other also. And by nature-lover I mean the amateur with wide tastes rather than the professor and specialist, since a danger often lurks in specialising, and the tendency of the specialist is to become narrow and hypercritical.

The naturalist will know enough of geology to be able to tell, as he passes through a district by train or motor, the nature of the soil and the character of the rocks. The railway cuttings are carefully scanned, since they are like the open pages of a great book many of whose leaves are incapable of being inspected. The plants, as well as the strata and colour of the rocks, have their distinctive message. On the limestone, for example, grow certain species which are looked for in vain on the dead lavas, the seas of pumice-stone, the schists or the granites. By the watercourses and in the morasses are plants which cannot find foothold elsewhere. Thus it is largely by the twofold testimony of the rocks and the plants, the soil and the flora, that the swiftly-moving traveller forms his conclusions. He notes in passing the zones within which given trees are found to flourish, where the Olive and vine, Mulberry and Fig, Pine and Birch first come into prominence, and compares what he observes as he passes from south to north with what he sees as he climbs from the sea-level to the snow line on the Alps.

It would be difficult for a traveller of limited means and leisure, even in these days of speedy transit, to visit all the places he desires to explore, and bring back exact impressions and detailed descriptions of the same, if he had not a good working knowledge of botany and geology. If to these he adds physical geography, zoology and meteorology, so much the better. For there is always the danger when relying on passing observations as distinguished from systematic study, of drawing wrong conclusions. Two plants dominate the scrub of the Mediterranean in April, and as they are swiftly passed they give the impression to the English traveller of Wild Roses and Hibiscus. It is only when one halts and plucks them that their true character becomes apparent, but ever afterwards they will be recognised as two different species of Cistus. The same applies to the different species of Heath and Broom, as well as to the many Composites and Umbellifers. Yet, who that has once seen the Mediterranean Heath or *bruyère*—from which the *briar* pipes are made—in all the glory of its Easter garb, is ever likely to confuse it with any other plant?

It is when the naturalist comes down to details however, that the value of his studies becomes most apparent. During a recent tour in Corsica and the Maritime Alps, meeting daily with a miscellaneous company of Englishmen, Americans and foreign folk, it was interesting to observe the great advantage the naturalists had over the rest of the travellers. Not only were they the first to divine when we had passed from granite to marble or mica schist; they were also the readiest, by reason of their training in the art of observation, to note other peculiarities, such as local customs and usages, changes in styles of architecture and costumes, physiognomy and language. Others might be quicker to observe the type of motor and the name of the cycle manufacturer, but the artist and naturalist excelled in almost every other department.

Observations show that, as a rule, women take a keener interest in botany than in other branches of natural history, at least, in their earlier years. One sees this continually in University examinations. A wider range of subjects, however, not only adds zest and interest to travel, but also tends to greater accuracy in deduction and generalisation, and the widest knowledge possible should be imparted to our youths, that when they go abroad they may be fully equipped both for observation and for study. During recent years, it is pleasing to note that women undergraduates and graduates have been extending their field, but even now the proportion is too small, and the number of students of natural science, outside botany, is far too limited. *Hilderic Friend, Solihull.*

MESEMBRYANTHEMUM.

(*Continued from p.* 430, Vol. LXXXI.)

RHINEPHYLLUM, N. E. Br.

Stemless, perennial, succulents; night-flowering. Leaves opposite, in 1–2 pairs to a growth under natural conditions, but in several pairs to a growth under cultivation, thickened upwards or clavate, obtuse, flat on the face, rounded or keeled on the back, rough from being covered at the upper part with small, hard, white pimples. Flowers solitary, terminal, pedicellate, bractless. Calyx subequally 5-lobed nearly down to its union with the ovary, with the basal part hemispherical. Corolla closed during the day, expanding in the evening or at night, fragrant; petals in one series, free, scarcely longer than the calyx-lobes. Stamens numerous, erect from an incurved base, and the inner densely bearded there. Stigmas 5, ascending-spreading, subulate, somewhat plumose. Ovary inferior, shallow, slightly elevated at the central part on the top, and with the margin (disk) also raised, 5-celled, with the placentas on the floor of the shallow cells. Capsule small, shortly obconical, flat on the top, with the sutures slightly raised and gaping, with 5 valves and cells; valves deltoid, reflexed when expanded; expanding-keels as long as the valves, contiguous into a central keel throughout, with broad membranous marginal wings that are not united in pairs between the valves; cells open, without cell-wings or tubercles. Seeds numerous in each cell, globose-ovoid, slightly compressed, with a nipple at one end, smooth.

Species 2, R. Muiri being the type of the genus; natives of the Karoo region of South Africa.

The name is derived from the Greek, *rhine*, a file and *phyllon*, a leaf, in allusion to the rough surface of the leaves.

In habit this genus somewhat resembles that of Titanopsis, Schwant., and Psammophora, Schwant., but the structure of the flower and fruit is quite different, and more closely related to that of Delosperma, N. E. Br., from which it differs in habit, in flowering at night, in its firm and rough (not soft and papulose) leaves, absence of staminodes and shallower cells of the ovary.

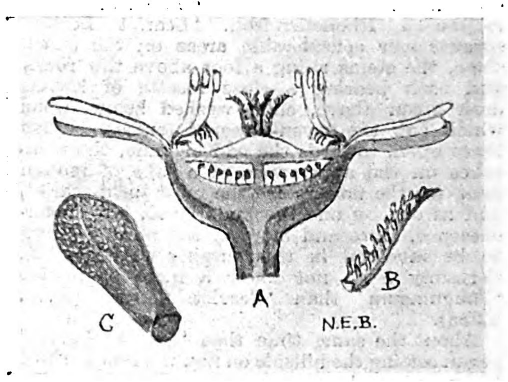

FIG. 39.—RHINEPHYLLUM MUIRI.

A, section of flower, enlarged; B, a stigma, enlarged; C, leaf, natural size.

My diagram of the floral structure (Fig. 39) is made partly from a living flower of R. Muiri that never fully expanded, and partly from dried flowers sent to me with the living plants by Dr. Muir.

1. R. Muiri, N. E. Br. (Fig. 39).—Plant varying from ¾–1½ inch in height. Rootstock stout, fleshy, producing several tufts of leaves at the top, forming a small clump. Leaves ascending or ascending-spreading, 5–14 lines long, 2–5 lines broad and 1½–3 lines thick at the apical part, tapering downwards to a much smaller base, trigonously clavate, obtuse or bluntly pointed, flat on the face, with sharp edges, very rounded and scarcely keeled on the back on South African plants, becoming slightly keeled (especially at the apex) under cultivation; surface glabrous, smooth on the lower half and the upper half covered with very small and slightly raised, hard, white pimples, and the edges sharply defined by a continuous, hard or cartilaginous line, the ground colour of the leaf being green or purplish. Pedicel terminal, bractless, about 6 lines long, about 1 line thick, glabrous. Calyx glabrous, dull green, tinged with purple, basal part somewhat hemispheric, but narrowing into the pedicel and about 4 lines in diameter; lobes 3–3½ lines long, 1½–2 lines

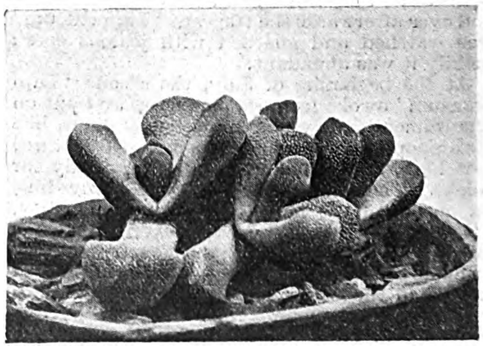

FIG. 40.—RHINEPHYLLUM PILLANSII.

broad at the base, thence gradually tapering to an obtuse and slightly hooded apex. Corolla about 8–9 lines in diameter (but not seen fully open), expanding (according to Dr. Muir) after 6 p.m., and seen to be open until 1.15 a.m., but closed when inspected at 3.30 a.m., during the same night, closed during the day, fragrant; petals about 35, in one series, 2½–3 lines long and ¼-line broad, linear, obtuse, pale lemon yellow or white. Stamens numerous, erect from an incurved base, about 2½ lines long, the filaments of the inner series densely bearded at the base, white, anthers pale yellow. Disk apparently entire, but could not be properly examined without destruction of the only living flower seen, yellowish-green at the margin. Stigmas 5, ascending, shorter than the stamens and about 1½ line long, subulate and somewhat plumose, yellowish-green. Top of the ovary green. Capsule, when closed, 2¼ lines in diameter, brown outside; when expanded, 4 lines in diameter and entirely ochraceous inside, otherwise as described under the genus. Seeds about ¼-line long, globose-ovoid, slightly compressed, smooth, very pale brownish, with a darker point.

Ladismith and Swellendam Divisions: In various parts of the Klein Karoo, growing on the quartz-fields and on the Bokkeveld shales, at an altitude of 1,500-2,000 feet, flowering in March and October to December, not common, Muir, 3,790! 3,884! 4,023!

This very distinct little plant is another of Dr. Muir's discoveries, and he informs me that it "closely resembles the Bokkeveld shales on which it grows" so that it is probably not easily discoverable.

2.—R. Pillansii, N. E. Br. (Fig. 40).—Habit exactly as in R. Muiri. Leaves in 2–3 pairs to a growth, ascending-spreading, 6–9 lines long, 3–5 lines broad and 2–3 lines thick at the apical part, where the leaf is dilated and much thicker than at the base, somewhat spathulately clavate, obtuse, flat on the face, with the edges not very sharp and without well defined or cartilaginous edges or edges formed of contiguous white dots, rounded on the back; surface glabrous, thickly covered nearly all over with slightly prominent hard, whitish dots on a livid, slaty-green ground. Flowers and fruit not seen.

Laingsburgh Division: Near Matjesfontein, growing upon slate-coloured shales, Pillans!

This species differs from R. Muiri by its leaves being more abruptly dilated at the apical part, rather more obtuse, without well marked, cartilaginous edges, and by their peculiar and rather livid slaty-green colour. Mr. Pillans informed me that it so well simulated in colour the shales it grew upon as to be difficult to detect.

Fig. 40 is from a photograph of the plant sent to me by Mr. Pillans, taken by my daughter about four months after it was received. *N. E. Brown.*

A MENACE TO TOADS.

It is an unquestionable fact that Toads (Bufo vulgaris) are useful animals, and their presence in gardens and greenhouses is to be desired by reason of their insectivorous habits. During the month of July, we are likely to come across injured toads, both in town and country gardens, and the reasons for this note are to consider the question from two aspects, firstly, the humanitarian and, secondly, the economic. It is desired to draw attention to the increasing number of toads suffering from myiasis in the southern districts of this country. Myiasis signifies the presence of dipterous (two-winged flies) larvae in the living body of animals, and in this case it is due to the larvae of a species of "greenbottle." Lucilia bufonivora, Moniez.

All normally minded people are affected when they see an animal suffer pain, and it is for this reason so much as from the economic aspect that it is suggested that all who find injured toads should immediately take steps to destroy the doomed animal. This may be done humanely by dropping the animal into boiling water or placing it in a box with a few drops of ether or chloroform. By so doing, they will not only save the affected toad an unnecessary amount of suffering, but will lessen the number of "greenbottles." responsible for the increasing mortality of this beneficial animal.

A correspondent writing to *The Gardeners' Chronicle** remarks that after introducing toads into Peach houses, the numbers of ants, earwigs and woodlice were considerably lessened, and added that he never knew that there were so many damaged toads about.

A considerable amount of work has been done by English and Continental workers on the subject of primary myiasis in the nasal and orbital cavities of toads. Breeding-cage experiments were carried out at Wisley during July and August, 1920, and it will make for clarity if I briefly summarise our knowledge so that the danger may be lessened.

The species responsible for myiasis in toads are Lucilia bufonivora, Moniez, and L. silvarum, Meig.† The gravid female lays from twenty to forty eggs, either on the skin of the head and back or in the nasal cavities. The larvae, on emergence, make their way into the nostrils and work upwards into the brain and eyes. So soon as the larvae have penetrated into the forehead, the toads shows sign of pain, and may be seen stroking and poking at the affected spot, and constantly sneezing as if to dislodge the larvae. As the larvae approach the brain, the toad is found during the daytime walking in a stilted manner in circles, inclining its head to one side. Eventually, as the brain is destroyed, the toad quickly dies. When full fed, the larvae leave their host and pupate in the soil beneath the body, the flies emerging in from ten to fourteen days. Occasionally, it is found that the larvae lose their way and come to grief in the eye, which becomes inflamed, the iris being partially or completely destroyed. It is not uncommon to find half-blinded toads which recover their health and behave like normal specimens.

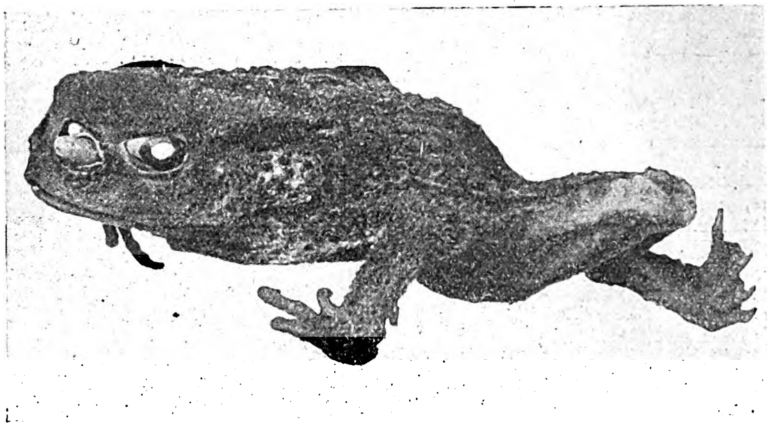

FIG. 41.—TOAD SUFFERING FROM MYIASIS.

Two larvae of Lucilia silvarum are shown in the enlarged nasal cavity.

Stubbs,‡ in a paper entitled "The Reptiles and Amphibians of Essex," mentions myiasis in toads, and records that numerous eyeless animals are met with in town gardens and in confinement, and even in places far removed from towns and villages. This condition he rightly attributes to the larvae of L. bufonivora. He also mentions that when captive toads are fed on gravid "Bluebottles," it is only too common to find that the eggs hatch out in the stomach and destroy the animal.

Young toads are just as liable to attack as adult specimens, but it is found that when a young animal is "struck," many of the larvae die through shortage of food. Figure 41 shows such an animal, out of which thirty-one larvae were taken on July 9, 1927; the anal segments of two larvae are seen protruding from the enlarged nasal cavity.

The larger toad, commonly called the Natterjack (B. calamita), although it has a more local distribution, is also liable to fall a victim to myiasis.§

It is found that in some years the occurrence of this pest is more prevalent than in others. Myiasis in toads was particularly common at Wisley in 1920 and 1926. *G. Fox Wilson, R.H.S. Laboratory, Wisley.*

ROYAL HORTICULTURAL SOCIETY'S EXAMINATION.

As a result of the examination held on March 23, 1927, 147 candidates (Seniors) were examined and of these nine were placed in the First Class, thirty-three in the Second, and fifty-one in the Third Class, leaving fifty-four who failed to satisfy the examiners.

Miss D. B. Watson of Aldersey Hall, near Chester, will receive a Silver-Gilt Medal, as being First.

The examiners report that on the whole the examination was satisfactory and the successful candidates showed a good knowledge of the elementary principles underlying horticulture. The answers on the cultivation of Melons, Figs and Cucumbers were very good and also those dealing with herbaceous plants. The weaknesses of the candidates were shown in the lack of appreciation of the functions relating to transpiration and the life-history of the damping-off fungus. The knowledge shown of greenhouse cultivation of annuals was disappointing.

Of the thirty-three candidates (Juniors) examined, seventeen were placed in the First Class, fifteen in the Second Class and one in the Third Class. Only one candidate failed.

Mr. Eric C. Wray, of the Midland Agricultural College, Sutton Bonington, will receive a Silver Medal as being First.

The examiners report that the examination was highly satisfactory and the actual instruction had been thorough; a certain weakness of knowledge was displayed in the answers to the questions on manures and the kinds of annuals and their cultivation.

SENIORS.

Class I.

1, Miss D. B. Watson, Aldersey Horticultural College, nr. Chester. 2, Miss A. M. Kelly, Aldersey Horticultural College, nr. Chester. 3, Mr. Frank W. Thorns, 51, Defoe Avenue, Kew Gardens. 4, Miss Margaret Brown, 63, Eastern Avenue, Reading and Mr. K. A. Thirkeldsen, R.H.S. Gardens, Wisley, Ripley, Surrey. 6, Miss Mary L. Heap, Studley College, Warwickshire. 7, Miss H. M. Colley, Studley College, Warwickshire, and Miss R. B. Taylor, The Lawns, Thorpe Road, Peterborough. 9, Miss R. E. Bunker, Clavering, Baker St., Potters Bar.

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* *The Gardeners' Chronicle*, December 20, 1924, p. 428.

† Richards, *Trans. Ent. Soc.*, London, Vol. LXXIV. Pt. ii., pp. 256–257.

‡ *Essex Naturalist*, Vol. XIX., Pt. iii., pp. 150–151.

§ *Cambridge Natural History*, Vol. III., pp. 176–177.

Class II.

1, Mr. William M. Campbell, 42, Hallam St., Balsall Heath, Birmingham, and Miss H. M. Radcliffe, Studley College, Warwickshire. 3, Miss Barbara Crosland, St. Andrew's Hall, Reading. 4, Mr. Christopher R. Fry, Benson Terrace, Penclawdd, Swansea; Mr. Robert Cherry, St. John's School, Tiffield, Towcester; and Miss K. H. Thornhill, Studley College, Warwickshire. 7, Miss M. Eddleston, Studley College, Warwickshire. 8, Mr. John L. Hooper, Duck's Hill, Northwood; Miss E. M. Howard, Lythe Hill Farm, Haslemere, Surrey; Miss F. C. L. Farrar, Studley College, Warwickshire; and Miss Mary Finch, Studley College, Warwickshire. 12, Miss G. Morgan Jones, Penwern, Cilcenerise, Ciliau-Aeron; Miss Mary Howe, Studley College, Warwickshire; Mr. E. R. Brown, 25, West Ashton Road, Trowbridge and Mr. Percy Bond, Petwood Gardens, Woodhall Spa. 16, Mr. Reginald B. Hands, 7, Arley Rd., Selly Oak, Birmingham and Miss A. C. Crookenden, Aldersey Horticultural College, nr. Chester. 18, Miss R. M. Beale, Studley College; Mr. B. O. Mulligan, R.H.S. Gardens, Wisley; and Mr. R. A. Engledew, R.H.S. Gardens, Wisley. 21, Miss Margaret Brown, Ashleigh, Harrow Rd., Linthorpe, Middlesboro; Miss Eileen Howells, Somerset Farm Institute, Cannington, Bridgwater; and Mr. Cyril Dyson, Granny Hall, Brighouse, Yorks. 24, Mr. R. L. Rogers, 2, Pitville Pl., Cotham Hill, Redland, Bristol; Mr. A. A. Culham, 79, Gladstone Rd., Wimbledon; Mr. Geoffrey Rhodes, The Heights, Thurstonland, nr. Huddersfield; and Mr. J. N. B. Holm, R.H.S. Gardens, Wisley. 28, Mr. Leonard Atkins, Botanic Garden, Cambridge; Miss Betty Chater, Studley College, and Mr. John Ivison, Gaia Fields Nursery, Lichfield. 31, Mr. William Dove, Cogenhoe, Northampton and Miss Eileen, Senior, Studley College. 33, Mr. William H. Cook, Botanic Garden, Cambridge.

Class III.

1, Mr. Ernest Hewitson, 79, Gladstone Rd., Wimbledon; Miss E. M. Irvine, Studley College; and Mr. J. D. Rowden, R.H.S. Gardens, Wisley. 4, Mr. Sidney G. T. Grice, 4, New Cottages, Watford Rd., St. Stephens; Miss M. C. Johnston, Studley College, St. Albans; Miss D. M. Jones, Studley College; Mr. J. L. Beddall, R.H.S. Gardens, Wisley; Mr. J. D. Stewart, R.H.S. Gardens, Wisley, and Mr. Alfred Northmore, The Gardens, The High Beech, Hollington, St. Leonards-on-Sea. 10, Mr. Thomas D. Boyd, 7, Willow Cottages, Kew and Mr. R. Williams, R.H.S. Gardens, Wisley. 12, Mr. John W. Worrall, 154, Nottingham Rd., Eastwood, Notts, and Mr. John A. Wright, Nottingham Rd., Keyworth, Notts. 14, Mr. R. J. Gutsell, 6, Church Rd., Leatherhead; Miss Alida van der Goot, St. Paul's Girls' School, Brook Green, W.; Mr. L. F. J. Paterson, Banbury, Canadia, nr. Battle, Sussex, and Mr. F. W. Staddon, R.H.S. Gardens, Wisley. 18, Mr. William Turner, St. John's School, Tiffield, Towcester. 19, Mr. Harry Roscoe, 21, Wheatfield St., Haulgh, Bolton; Mr. Ernest Maleham, 11, Northbourne Av., Morpeth; Miss G. Hibbert, Wharncliffe, Greenclose, Whitchurch, Cardiff, and Mr. Harry H. Martin, Lynton, Brace St., Walsall. 23, Mr. John C. Irvine, Chester Gardens, Humshaugh-on-Tyne; Mr. Thomas C. Gunning, Station Rd., Wrington, Bristol, and Mr. John W. Breed, A.V.T.C., Catterick Camp, Yorks. 26, Mr. Robert Erskine, Houston Head, Houston Ry., Johnstone, N.B.; Miss D. M. Sanders, Duffryn Newydd, Llanished, Cardiff; and Mr. A. S. Green, R.H.S. Gardens, Wisley. 29, Mr. N. E. Flitters, 18, St. Mary's Rd., Wimbledon; Mr. S. A Powell, R.H.S. Gardens, Wisley; and Mr. W. J. Blakeway, R.H.S. Gardens, Wisley. 32. Mr. V. N. Medhurst, 63, Bourne Rd., Bexley, Kent; Mr. M. J. Peters, Beaulieu, St. Michael's Rd., Llandaff; Mr. Norman Heap, Abberley Hall Gardens, Gt. Witley, Worcester; Mr. John D. Gordon, 2, Rosebank Terr., Lilmalcolm, Renfrewshire; Mr. Robert Wadsworth, The Heys, Thongsbridge, nr. Huddersfield; Mr. A. E. Harper, Queens Park, Manchester; and Mr. V. H. Balmer, 12, Hawthorn Av., Wigan. 39, Mr. Charles Robinson, John Innes Horticultural Institute, Merton; Mr. D. Winchester, 79, Gladstone Road, Wimbledon; Mr. Arthur J. Brown, Cenoyre Gardens, nr. Brecon, S. Wales; and Mr. S. G. Smith, R.H.S. Gardens, Wisley. 43, Mr. Alfred Mould, Nassington, Peterborough; Mr. W. H. Sambourne, Heywood Terr., Pill, nr. Bristol; and Mr. William Lee, South Gate Street, Redruth, Cornwall. 46, Mr. William Colenso, 5 Union, St., Guernsey and Mr. W. Porter, Botanic Gardens, Cambridge. 48, Mr. Sam Champion, St. David's Hall, Reading; Mr. A. E. Large, 251, Boxley Rd., Maidstone; Miss E. M. Bennett, Rhodyate Cottage, Congresbury, nr. Bristol; and Mr. D. P. Ferens, R.H.S. Gardens, Wisley, Ripley, Surrey.

JUNIORS.

Class I.

1, Mr. Eric C. Wray, Midland Agricultural College, Sutton Bonington. 2, Mr. Albert E. Cartwright, Lord Wandsworth Agricultural College, Long Sutton, Basingstoke. 3, Mr. George J. Searle, Somerset Farm Institute, Cannington, Bridgwater. 4, Mr. Frederick A. Roach, Midland Agricultural College, Sutton Bonington. 5, Mr. Andrew G. Brown, The Gardens, Craigo House, by Montrose. 6, Mr. Geoffrey Eaton, Midland Agricultural College, Sutton Bonington. 7, Mr. Charles W. Wilkins, Lord Wandsworth Agricultural College, Long Sutton, Basingstoke. 8, Mr. F. W. Hambly, Seale-Hayne Agricultural College, Newton Abbot. 9, Mr. Arthur R. Boughton, 3, Bere Lane, Glastonbury and Mr. Frank Hancock, Cannington Court, nr. Bridgwater. 11, Mr. Leslie S. G. Burbidge, Lord Wandsworth Agricultural College, Long Sutton, Basingstoke and Miss K. G. Hallett, 24, Westward Rise, Barry, Cardiff. 13, Miss Mariquita Langton, The Poplars, Boxmoor, Herts. 14, Mr. Dennis Duffill, Midland Agricultural College, Sutton, Bonington. 15, Miss G. M. Baines, Stixwould, Lincoln. 16, Mr. Cyril K. Bell, Queen St., Bardney, Lincoln. 17, Miss D. I. Hopewell, Wragby Rd., Bardney, Lincoln.

Class II.

1, Miss Kathleen Barr, Routh Rd., Wragby, Lincoln, and Mr. R. E. Dean, R.H.S. Gardens, Wisley. 3, Miss Kathleen Brewster, The Station, Bardney, Lincoln, and Miss Kathleen Clift, Station Rd., Bardney, Lincoln. 5, Mr. John R. Quayle, John Innes Horticultural Institute, Merton, and Miss Eileen M. Kent, Station Rd., Bardney, Lincoln. 7, Mr. William Abbott, Fylde Farm School, Poulton-le-Fylde, Blackpool. 8, Mr. Ernest H. Wensley, 77, Llanfair Rd., Canton, Cardiff, and Miss D. I. Blades, Silver St., Bardney, Lincoln. 10, Miss May Clift, Station Rd., Bardney, Lincoln. 11, Mr. Ronald E. Hardwick, Pendower, Shepton Beauchamp, Seavington S. O., Somerset. 12, Mr. John Whittaker, Fylde Farm School, Poulton-le-Fylde, Blackpool. 13, Mr. Harold Barton, Fylde Farm School, Poulton-le-Fylde, Blackpool. 14, Mr. P. K. Bear, R.H.S. Gardens, Wisley. 15, Mr. Stephen Prophet, Fylde Farm School, Poulton-le-Fylde.

Class III.

1, Mr. J. Roberts, Heaton Park, Manchester.

FRUIT GARDEN.

DETERIORATION OF STRAWBERRIES.

KNOWING some of the growers whose Strawberry crops have failed, I am convinced that there are far more serious causes for the failure than scarcity of manure, or the use of coal ashes in gardens (as suggested by Mr. Grigor Roy, page 55).

The finest Strawberries I have grown were produced on old pasture land with a gravelly subsoil. The land was deeply trenched and heavily manured. The varieties were Royal Sovereign, Fillbasket, The Earl, King George V, and Givon's Late Prolific. My nearest neighbour, in a very old garden on a rich, dark loam, grew equally good Strawberries, and his plants produced stronger and much darker foliage than mine. During the nine years these two gardens were under my close observation, the only difficulty experienced in the management of the Strawberry crops was caused through drought.

Upon taking charge of another garden, I found an old, exhausted Strawberry bed, and a number of young plants in small pots which had been taken from the old plants; the varieties were Royal Sovereign and Waterloo. The layers were planted out, but only a few produced any fruit the following season. The plants being clean and healthy, layers were taken from them, and the following season Royal Sovereign produced an excellent crop, but Waterloo was a failure. *C. Ruse.*

STRAWBERRY MADAME KOOI.

FROM various reports, it is quite evident that the Strawberry crop this year was undoubtedly considerably under the average. One large grower, with soil of a medium loam on a gravel subsoil, reported that his crop was seventy-five per cent. under average, and that the quality was very poor. Another grower, on a stonebrash soil over clay, reported a seventy-five per cent. under average crop, but that the quality was medium.

In both cases Royal Sovereign was the worst cropper of the varieties grown. The only variety which seemed to crop well almost everywhere was Madame Kooi. One grower reported enormous crops of Madame Kooi when all other sorts failed. The soil there was a calcareous loam on a clay subsoil. Another grower, with a light sandy soil over a gravel subsoil, reported that the only variety (out of a half-dozen) which had done well was Madame Kooi.

The great drawback to this midseason variety is undoubtedly its lack of flavour. The fruits are large, a point which counts with many people when they buy anything. A Strawberry which is a strong and healthy grower and a good cropper is worth growing, even if the flavour be second-rate. *S. H.*

HOME CORRESPONDENCE.

The Scent of Roses.—It would have been impossible to have chosen three ladies who are better known in the horticultural world to judge scented Roses at the National Rose Society's recent exhibition, at Vincent Square, than the three who acted on this occasion. The method, however, of judging the Roses seems to me to be haphazard. Empirical methods must be adopted until scientific ones can be evolved; Egerton's researches on the odour of metals, which appears to be due to low vapour pressure, indicates a line by which the scent of flowers ultimately may be measured. Till some method of this kind is produced, we have, however, to rely on the human nose! Accordingly, before a judge is approved for a competition on the scent of flowers her sense of smell should be tested in a physiological laboratory. Assuming that the selected judges pass satisfactorily such a test, they should proceed to judge the flowers either in a dark room or blindfolded. Each judge should judge individually with a clerk as guide and to make any record required. After the judges have completed their tests the results should be compared, and this process should be continued until all three, or whatever may be the number of judges selected, choose the same flower. The only "catch" I see in this eminently desirable arrangement is that if this had been adopted at the National Rose Show the three ladies would probably still be smelling Roses at the R.H.S. Hall! In any case, the ladies who judged are to be thanked for what must be a very thankless task, and the *Daily Mail* and the National Rose Society congratulated on the competition, which will go far to increase the number of new Roses with old Rose scent. *William Lawrence, Burford.*

SOCIETIES.

BLACKPOOL FLOWER SHOW.

JULY 20, 21 AND 22.—The latest Corporation to enter the field of horticultural enterprise is Blackpool, and its first attempt to hold a great horticultural exhibition was made on the above dates in Stanley Park, a big, open space that is sadly lacking in trees, and where the climate and soil do not appear to very ably second Mr. Blackburn's work of planting trees and shrubs.

For an initial effort the show was a great success, but the authorities have been fortunate in so much as they have had the enterprise of Hanley, Wolverhampton, Shrewsbury, York and Southport under observation for two or three years past, not to mention the Chelsea shows.

The steadily increasing advent of town authorities into the business of horticultural showmen is exceedingly interesting, and there are not wanting those who look with some concern upon the use of the local rates to found and continue big flower shows. However, the aim in each case is to provide an additional and high-class attraction to supplement those a town already possesses. This is, frankly, the aim of Blackpool, and if the end justifies the means, in so far as adding a great attraction, increasing the number of visitors, and bringing good money into the town, are concerned, then the ratepayers will have no cause to complain of the foresight and enterprise of its Council and officials. If there is an eventual loss over the business and no tangible assets to counterbalance the direct financial debit balance, then the Councillors will have to withstand sharp criticism at subsequent elections.

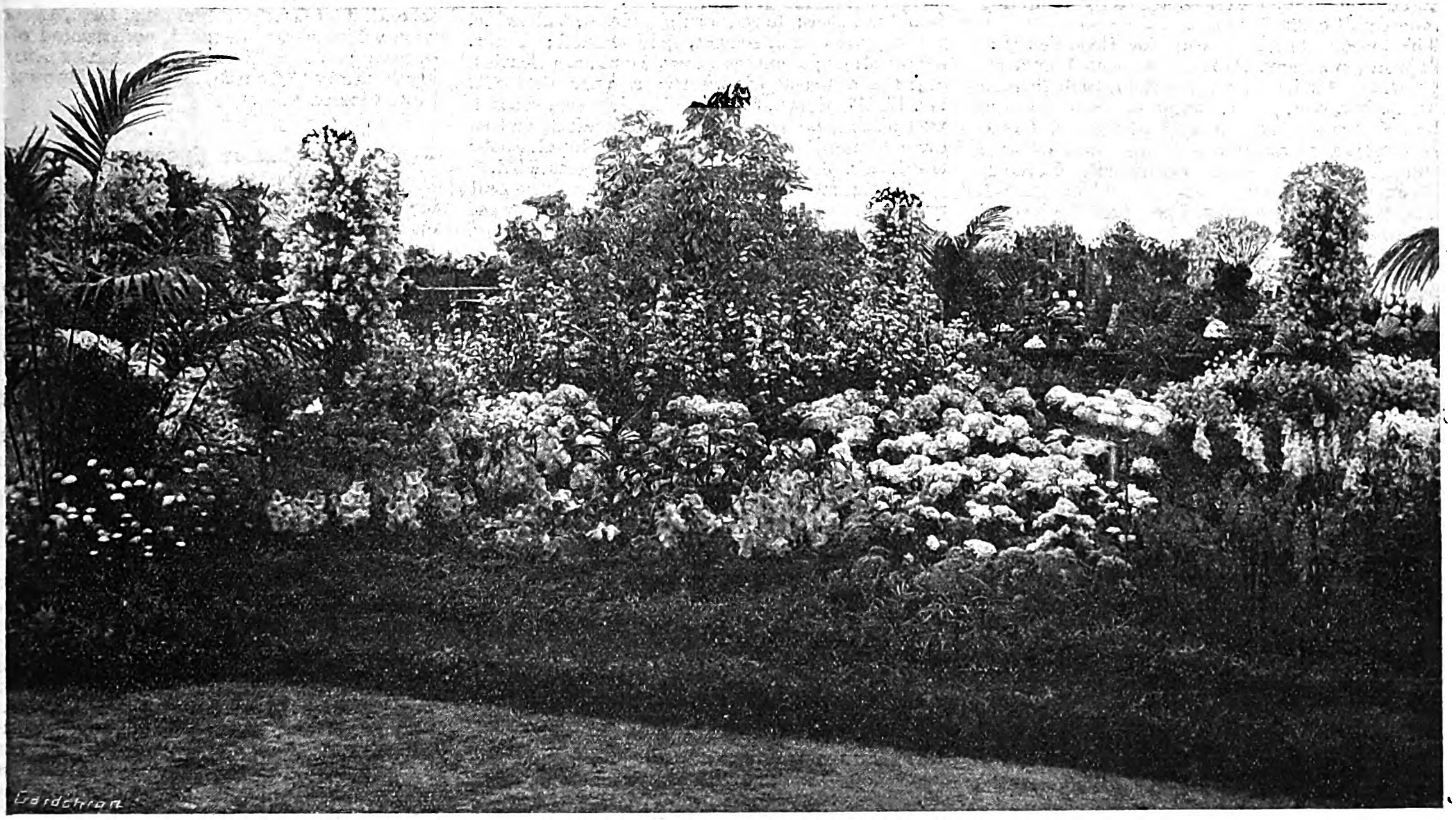

FIG. 42.—BLACKPOOL SHOW: PART OF MESSRS. JAMES CARTER AND CO.'S GROUP FOR WHICH THEY WERE AWARDED A CHALLENGE TROPHY FOR THE BEST TRADE DISPLAY AND A LARGE GOLD MEDAL.

Whether the Blackpool show will prove a lasting success remains to be seen. No amount of rhetorical and fulsome optimism will make it a success. Success is only achieved by securing a large attendance of people who are interested in gardens and gardening, and who will place substantial orders with the trade growers whose exhibits make up a very large part of the attractive display. Unless good business is done the trade will not continuously attend any show, no matter whether it is held in the north or in the south, or conducted by the Royal Horticultural Society, a local committee, or a Corporation.

We should like to see Blackpool Show continue, become increasingly successful and the means of creating new enthusiasm for gardening in the wide surrounding manufacturing districts as well as among those who from other manufacturing districts make Blackpool their holiday resort.

We have nothing but praise for the organisation of Blackpool show and offer congratulations to Mr. Foster, the Secretary, and Mr. Blackburn, the Parks Superintendent, who acted as Show Superintendent. Both the Mayor and the Deputy Mayor also deserve congratulations, the former for initiating the effort, and the latter for untiring work as Chairman of the Show Committee, while the generous donors of cups and trophies are deserving of thanks. The horticultural trade lent hearty support to the new venture, and the horticultural sundriesmen made unusually good displays. Doubtless there are many matters the Committee will alter or improve next year as the result of this year's experience, but we would suggest that there should be a thorough reorganisation of the arrangements from the entrance to the park to the entrance to the tents. First impressions count for much, and a good impression would be made if the approaches to the show tents were used for the display of outdoor gardens, rather than garden sundries, etc.

In so far as show space is concerned, the tents at Blackpool covered 85,000 square feet, and the entries in competitive classes amounted to about two thousand. Messrs. JAMES CARTER AND CO. put up the biggest trade display we have ever seen and worthily secured the premier award for their brilliant efforts. The attendance on the opening day was poor and in sharp contrast to the generous hospitality extended by the Mayor and Corporation to the judges, leading exhibitors and pressmen, all of whom were invited to lunch after the opening of the show by Sir Walter de Frece, and to dinner at the close of the day, when the Mayor, Alderman Fenton, presided over a large gathering of well-known horticulturists. The principal after-dinner speakers were Sir Walter de Frece, Alderman Lumb, Col. Gavin Jones, Mr. G. Henslow, Mr. John Cypher and Mr. C. H. Curtis.

GROUPS AND PLANTS.

The large group classes were a fine feature of the show, but for the sake of close comparisons we should have liked to have seen the exhibits in each class placed side by side. The Blackpool Winter Garden Cup and first prize of £50, offered for the best group of flowering and fine foliage plants was won by Messrs. J. CYPHER AND SONS with one of their delightful arrangements in which they associated brilliant Codiaeums, Dracaenas and Begonia Rex varieties, with Francoa ramosa, Gesneras in variety, Fuchsias of the fulgens section, Clerodendron fallax, Odontoglossums, Oncidium Papilio (a very great attraction), Cypripediums, Anthuriums and Liliums. Palms, Ferns and Nertera depressa were utilised in various positions to beautify the double-arched design. Humea elegans added grace to the whole display. Mr. W. HOLMES, Chesterfield, secured the second prize with a very pleasing arrangement wherein Codiaeums, Ixoras, Francoa ramosa, Lilium longiflorum, L. auratum and L. Henryi were used effectively, and the towering Palms were especially good. The third prize went to Mr. T. M. PETCH, Bradford.

For a group of non-flowering plants, Mr. W. HOLMES beat Messrs. J. CYPHER AND SONS, winning a Silver Trophy and first prize with a handsome and elegant arrangement of Palms, Codiaeums, Caladiums, Anthuriums, Sanchezia nobilis, Coleus, Phyllanthus and Begonias; his Codiaeums were particularly good. Messrs. J. CYPHER AND SONS were awarded second prize, for fine Dracaenas, Palms and Caladiums, but it was obvious the Cheltenham firm had insufficient plants to complete their exhibit; indeed, we understand that they and others were prepared only for a group facing one way, whereas a double-faced group had to be arranged. Mr. T. M. Petch received the third prize.

The best fifteen stove and greenhouse plants were shown by Mr. Falconer, Cheadle Royal Mental Hospital, who won the Blackpool Parks Committee Cup and first prize with capital examples of Clerodendron Thompsonae, Chironia ixifera, Calceolaria Banksii, Humea elegans, Gesnera Fire King, Statice intermedia, Acalypha Macafeeana, Phyllanthus rosea picta, and two big Hydrangeas—La Marne (pink) and La Marne (blue), the latter just losing its colour a little; and Kentia Fosteriana. Second prize was won by Messrs. James Cypher and Sons, whose plant of Gloriosa Rothshildianum was one of the best we have seen, and carried about four dozen flowers; G. Plantii had about a dozen yellow flowers; Statice intermedia was also good in this set.

Mr. Falconer, Royal Cheadle Mental Hospital, who is becoming a very successful competitor, won several prizes for plants in the amateurs' section, and was the only exhibitor in the small group class.

The Savoy Challenge Cup for Begonias was well won by Messrs. Blackmore and Langdon with an exhibit worthy of the firm, their flowers of C. E. Pearson, Brian Langdon, John Mercer, Hilda Langdon, Albatross, Lady Cory, Grace and Pavlova being superb in size and colour; second, Mr. R. Lawrie, Carnworth, Lanark, with cut blooms only.

The Garden Supplies, Ltd., had the best of two groups of Hydrangeas, but neither set was of a very high standard of quality.

Roses and Carnations.

The Mayor of Blackpool's Cup, offered for the best representative collection of Roses arranged on a space twenty-five feet by five feet, was won by Mr. C. Gregory, Chilwell, Notts., with a very bright exhibit of pillars, bushes and vases of clean, medium-sized flowers. A large basket of Lady Inchiquin formed the central feature; other notable sorts were Blossom, Hortulanus Buddé, Mabel Morse, Lady Roundway, Golden Emblem, Emma Wright and Shot Silk.

The Beckerstaffe Trophy and first prize for a display of Roses were won by Messrs. S. McGredy and Son, Portadown, with a large and brilliant exhibit of fine flowers arranged in baskets, and dwarf pillars. This firm had particularly good displays of Norman Lambert, Mrs. Barraclough, Margaret. McGredy, Sir David Davis, Mrs. H. Morse, Marion Cran, Shot Silk, Lord Charlemont, The Queen Alexandra, Jas. Gibson and American Pillar. Messrs. Bees, Ltd., secured second prize with an exhibit that was little behind the premier display; they showed J. C. Thornton, Mabel Morse, Adonis, Ophelia, Shot Silk, Venus, General McArthur and Independence Day in fine form. Messrs. Wm. Lowe and Son, Beeston, were placed third, and they showed well.

Messrs. Wheatcroft Bros., Gedling, Notts., led in a good competition for seven baskets of Roses, winning the Fenton Challenge Trophy with very fresh blooms of Mrs. Henry Bowles, Mrs. H. Morse, The Queen Alexandra, Shot Silk, Golden Emblem, Gwenneth Jones and Mabel Morse. Mr. Charles Gregory, second, and Messrs. Frank Cant and Co., third.

For a basket of Tea and Noisette Roses, Mr. C. Gregory led with Mrs. Foley Hobbs, and Mr. J. Mattock came second with the same variety. For a basket of single Roses, Mr. J. Mattock gained first prize for a fine lot of Vesuvius, and Mr. H. Drew second, with the good old Irish Elegance. Messrs. Wheatcroft Bros. led for a basket of a Polyantha Rose; and Messrs. Bees came second with the new and brilliant Golden Salmon.

Mr. Charles Gregory and Messrs. B. R. Cant and Sons were placed first and second respectively for a dozen cut Roses, while for forty-eight blooms, Messrs. Frank Cant and Co. were worthily first prize winners, followed in order by Messrs. B. R. Cant and Sons and The Donard Nursery Co., Newcastle, Co. Down. The last-named firm led for two dozen blooms with a capital set, with Messrs. F. Cant and Co. and Mr. C. Gregory following, as named.

For a display of eighteen bunches of decorative garden Roses, the *Blackpool Times* Trophy was won by Mr. J. Mattock with a beautiful set of flowers, with Mr. C. Gregory second, and Mr. George Marriott, Carlton, third.

The best three baskets of cut Roses were submitted by Mr. Charles Godfrey, who showed Gwynn Carr, Lady Inchiquin and Mabel Morse; Messrs. Wheatcroft Bros., second.

The Millington Challenge Cup, offered for the best display of Carnations arranged on a large ground space, was awarded to Messrs. C. Engelmann, Ltd., for a handsome exhibit in which there were great sheaves of fine blooms of Orange Sunstar, Saffron, Dainty, Coral Glow, Brilliant, Laddie, Janet, Spectrum and Delice.

The best of four good exhibits of border Carnations and Picotees was the one shown by Mr. James Douglas, Great Bookham, who won the Mather Trophy with wondrously fine flowers of King of Cloves, crimson, E. Lyall Swete, scarlet; Lt. Shackelton, Mrs. P. Vlasto, white; Bookham Beau, May Morning, Kelso, Valentine, yellow, Flamingo, scarlet, gold shaded; Peter, deep yellow; Princess Mary, Bookham Scarlet, and the old-rose Cleopatra; a very fine set. Mr. H. Woolman, Shirley, Birmingham, second, with a handsome exhibit that included Cockatoo, Sir Galahad, Mary Murray and Royal Scot; third, Mr. J. R. Crowhurst, Burgess Hill.

Mr. Charles Wall, Bath, was an easy first prize winner in the class for a collection of perpetual Carnations arranged on a staging, and showed grand vases of Topsy, White Pearl, Laddie, Orange Sunstar, Marion Wilson, Dixie and Glorious; second, Mr. A. J. Blair, Chester.

Orchids.

Messrs. A. J. Keeling and Sons, Bradford, won the Bickerstaffe Trophy for a representative group of Orchids with a bright exhibit that contained some good examples of Vanda coerulea, Odontoglossum crispum Duke of York, Miltonia Bleuana var. White Admiral, Odontioda Red Skin, O. Coronation, Dendrobium chysotoxum, Anguloa Ruckeri, and Laelio-Cattleya Profusion var. compactum; second prize was awarded to J. McCartney, Esq. (gr. Mr. Potts), Bolton, for a very pretty exhibit that contained Laelio-Cattleya Profusion, Anguloa Cliftonii, Sophro-Cattleya Chamberlainiana, Miltonia Lambeauianum, Maxillaria venusta and Odontoglossum Queen Alexandra. Third prize fell to Messrs. Sutton Bros.

J. B. Adamson, Esq., Diggers' Hale Lane, Blackpool, led for three Orchids with well grown specimens of Odontioda Queen Mary var. Oriflamme, Cattleya Harold var. alba, and Cymbidium Lowianum; Mr. W. H. Richmond, Workington, second, and Mr. G. C. Liebert, Lytham, third. Mr. J. B. Adamson, had the best group of Orchids in the amateurs' section, and showed Cypripedium bellatulum, C. niveum Miltonias and Oncidiums in fine form. Mr. J. B. Adamson (gr. Mr. Howes), also won the trophy presented by Mr. Evans with an effective display containing Cattleya Dupreana, Laelio-Cattleya Profusion, fine spikes of various Odontoglossums and Oncidiums. Second prize was awarded to Col. Sir John Rutherford (gr. Mr. J. Lupton), Blackburn, for a display in which Odontoglossums figured prominently.

Mr. Adamson continued his success by winning the first prize for the best six Orchids, showing Cattleya Falco, C. Harold var. alba, Cypripedium Rosetti var. Goliath, C. Goweriana var. Gratrixianum, Odontoglossum Matador var. Sultan, and Laelio-Cattleya Hassellii var alba; Mr. G. C. Liebert, second.

Rock Gardens.

Two classes were provided for Rock and Water Gardens, one wherein water-worn limestone had to be used and the other in which any other stone than limestone was allowed. Ample space was provided in each case on a gently sloping bank and the exhibits in these two classes provided a fine display, but, as a consequence of the lateness of the season they did not present the rich floral colouring seen in similar designs in spring.

The Blackpool Corporation Trophy (value 100 guineas) was offered for the best exhibit in the two classes and it was won by Mr. Herbert Brook, Whetstone, who won first prize in the limestone arrangement with a pleasing design where a trickling stream and several mountain pools provided the central feature. The lowest pool contained Water Lilies. The planting was restrained and hardy subjects judiciously placed were Thymes, Sedums, Primulas, Companulas, and dwarf Conifers. Second, Mr. P. Gardner, Addington; third, Messrs. G. W. Thompson and Sons, Poulton-le-Fylde.

In the second class Mr. Gavin Jones, Letchworth, was awarded first prize and also the Trophy offered by Sir Walter de Frece, for the second best exhibit in the two classes. Mr. Jones used sandstone freely and in large masses, the design suggesting a rugged ravine, with some flat spaces on top of the largest rocks. The planting was a trifle scanty and evidently one needed to be at a higher elevation than the ordinary visitor to fully appreciate this exhibit; second, The Garden Supplies, Ltd., Liverpool, with a higher arrangement, constructed of slate outcrop; third, Messrs. J. Rashley and Co., Mytholmroyd; fourth, Messrs. W. Brown and Son, Ormskirk.

Hardy Flowers.

The Lindsay Parkinson Trophy and first prize for the best display of hardy flowers arranged on a ground space, were easily won by Messrs. Bees, Ltd., with a grand exhibit of finely grown and finely arranged blooms. Delphiniums were the leading feature and with these were splendid lots of Kniphofia Russell's Gold and Mrs. S. Smith, Eremurus Bungei, Lilium regale, L. excelsum and Alstroemerias, with Phloxes, Gaillardias, Armeria Bees' Ruby, Scabious and Pyrethrums along the front. Second prize was awarded to Messrs. W. Artindale and Son, Sheffield; third, Mr. W. Sydenham, Melbourne, Derby.

There were two large groups of Lilies and other bulbous plants and here the first prize was well won by Messrs. Bees with a very bright and bold display of Gladioli, Lilium candidum, L. regale, L. excelsum, L. Thunbergianum and L. umbellatum; second, Mr. T. M. Petch, Bradford.

The Broadhead Trophy offered for a collection of Gladioli was won by Mr. H. Prins, Wisbech, with a handsome and large group of large-flowered and Primulinus varieties; the former were represented by Princess Juliana, Rosary, Halley, Prince of Wales, Orange Blossom, Caruso and Moreno; second, Mr. F. Drew, Walsall, who showed only Primulinus sorts.

The best display of any species of hardy flowers, in variety, was the very delightful one arranged by Messrs. Oliver and Hunter, Moniave, who showed a wide range of subjects—adopting the plural significance of the word species. Their exhibit contained Primula Florinda, a fine lot of spikes of Lilium giganteum, L. pardalinum, Orchis foliosa, and Verbena Chaixii; second, Messrs. M. Prichard and Sons, who had a fine lot of Kniphofias; third, Mr. Thirkildsen. Messrs. Bees Ltd., had the best set of eighteen bunches of hardy flowers and also the first prize lot of twelve varieties of Delphiniums.

Messrs. Bees, Ltd., secured the foremost award for a group of Astilbes and had good examples of Granat, Gloria, Venus, Ceres and Salmon Queen; second, Messrs. M. Prichard and Son, who had Granat in splendid condition; this variety has the richest rose red colour of any Astilbe; third, Messrs. W Artindale and Son. Messrs. Artindale and Son were the only exhibitors of Paeonies and were awarded a second prize, as evidently the judges did not consider the award of a large cash prize and Silver Cup was justified in this case.

Messrs. Bees secured the leading prize for a group of Delphiniums arranged on a ground space, with the spikes cut their fine length. They showed splendid spikes of Welsh Boy, Coquette, Queen Marie, Purple Splendour, Cambria and Happy Thought; second, Messrs. Hewitt and Co, Solihull, who had a bright exhibit but had shortened spikes at the corners. Messrs. Harkness and Sons, Bedale, led for a group of Lupins with spikes of beautiful chamois, pink and mauve shades; they also won Alderman Lumb's Cup; second, The Garden Supplies Co., Liverpool; third, Mr. F. Drew, Walsall.

The South Shore Traders' Trophy and first prize for a collection of cut perennial flowers, annuals, grasses, Fern and Mosses was won by Messrs. M. Prichard and Sons, with a handsome display in which Poterium obtusum, Astilbe Betsy Cuperus, Astilbe Granat, of beautiful colouring, Kniphofia B. Prichard and K. King Fuad, were conspicuously good; second, Messrs. Gibson and Co., Leeming Bar.

Pansies and Violas.

These popular florists' flowers were shown in large numbers and we regret that time and space do not permit a lengthy account of the many fine displays. The leading prize-winners were Messrs. Sanderson and Upton, Shelford; Mr. Henry Bairstow, Bradford, who was a particularly successful prizewinner; Mr. Edward Clegg, Dewsbury; Mr. J. Holden, Kelso; and Mr. A. Frater, Edinburgh.

Sweet Peas.

For a large collection of Sweet Peas the Jenkinson Trophy accompanied the first prize won by Messrs. Herd Bros., Penrith, with a handsome display in which we noted fine flowers of Grenadier, Youth, Powerscourt, Charming and What Joy; second, Mr. Arthur Deigh, Stoke-on-Trent.

Sir Randolf Baker (gr. Mr. A. E. Usher), Ranston, Blandford, excelled for a dozen bunches of Sweet Peas and also for six bunches, winning a Gold Medal in the former class. His six bunches were fine examples of Magnet, Venus, Ivory Picture, Mammoth, Wembley and Colorado.

Mr. J. Haycock, Gyfelia, Wrexham, led in several of the single bunch classes, leading for a scarlet variety, with Grenadier; for a cream pink with Magnet; for a lavender or mauve variety, with R. F. Felton; and for a pink sort with Hebe. Mr. J. C. Moorhouse, Staining, scored for a crimson Sweet Pea with Sybil Henshaw, and Mrs. A. Beswick, Knutsford, won first prize for a flushed variety with Dainty Maid.

In the amateurs' section Mr. S. Richards (gr. Mr. S. Horton), Llwydion, Denbigh, won the trophy and first prize for a dozen bunches of Sweet Peas; Capt. Bibby, Shrewsbury, second.

Floral Designs.

Considerable interest was shown in the class for a group of floral designs, where each competitor had a distinct position, screened from the others, after the fashion of a shop window or a narrow room. Messrs. Bees won the premier award and trophy with a fine lot of designs arranged on and around several items of handsome furniture, and with a background that indicated a pleasing wall paper. There were wedding designs—bouquets, floral bell-bowls, vases and baskets of exquisite flowers, wherein Lilies, Gladioli, Delphiniums, Lily of the Valley and Stocks were the leading subjects used. Second, Messrs. Hewitt and Co., Solihull; third, Messrs. Arlington, Hull.

Mrs. John Nixon led for a basket of flowers with a charming design carried out in golden Arums, Francoa spikes, Codiaeum leaves and Cypripediums; Messrs. Adshead and Son, Gatley, second with golden Arums and Gladioli. Mrs. J. Nixon had the best basket of Dahlias.

For one hand bouquet Messrs. Adshead and Son led with a brilliant design in Cattleyas and Odontiodas; Mr. C. Vickers second. Miss Newsham, Aughton, led for a bowl of flowers with Delphiniums, Kniphofias and Prunus foliage, charmingly arranged. The best three bouquets came from Messrs. Adshead and Son with Carnations and a central design of white Cattleyas, Dendrobiums and Francoa sprays; second, Mr. C. Vickers.

The centre of one large tent was filled with table decorations, no fewer than seventy-two exhibits being displayed in these classes. Mrs. J. Nixon, Alderley Edge, led for a design in Sweet Peas, using pink flowers and sprays of variegated Sedum Sibthorpii; Mr. F. Emmott, Lancaster, second; Mrs. A. J. Blair, Congleton, third. For a design in any kind of flowers Mrs. Nixon was again successful with yellow Orchids and red Honeysuckle; Mr. F. Emmott second; and Mr. J. P. Leadbetter, Brough, third.

For Roses only, Mrs. A. J. Blair, won with a brilliant arrangement of Irish Fireflame; second, Miss Newsham; third, Mrs. E. F. Brown, Holywood, Belfast.

Fruit.

Sir A. Lindsay Parkinson, Marton, Blackpool, had a best pair of bunches of black Grapes and Mr. Joseph Maggee, Maryland, Bolton, the best pair of bunches of Black Hamburgh, but the specimens, though large in berry, were not yet well coloured. Mr. Duckworth, Kirkham, showed the best green-fleshed Melon, and Mr. J. G. Craven led for Peaches with grand fruits of Hale's Early and also had the best Nectarines, showing Lord Napier in splendid condition.

Messrs. Chas. E. Simpson, Ltd., York, won premier honours for a decorated table of fruit; they used pink Sweet Peas and Carnations, and Francoa ramosa, for decoration, and their leading dishes of fruits were Nectarines, Grapes, Melons, Plums, Pears and Strawberries.

Vegetables.

Mr. W. Robinson, Garstang, led for a dozen dishes of vegetables showing fine Tomatos, Peas, Cauliflowers, Cucumbers and Celery; Mr. Falconer, Cheadle, second; and Mr. Jas. Gibson, Welbeck, third.

Non-Competitive.

Non-competitive exhibits were unusually fine and extensive and constituted one of the great features of the show.

Messrs. Jas. Carter and Co. covered themselves with glory by winning the Championship Trophy offered for the best trade display, and a Large Gold Medal, with a delightful exhibit (Fig. 42) of Clarkias, Sweet Peas, Hydrangeas, Gloxinias, Begonias, Larkspurs, Codiaeums, Gladioli and Palms, artistically arranged to form a garden about fifty feet square, with four fountains and an edging of fern and green, cool grass. For a very fine exhibit of vegetables, finely arranged, many of the subjects shown in pots as growing, together with Melons and Tomatos, the Raynes Park firm received another Large Gold Medal, while a third Gold Medal was awarded them for their formal garden arranged outside the tents. Coltness Gem and H. J. Jones Dahlias filled the beds of the enclosed garden, while Campanula pyramidalis was used with fine effect between the two fountains and pools of water.

Messrs. Robert Bolton and Son, Birdbrook, Halstead, displayed Sweet Peas beautifully on a sixty feet run of staging, thus making one of the largest and finest exhibits of these flowers seen this season. For this display they won a handsome Trophy and large Gold Medal.

Mr. W. Wood and Son, Taplow, won the special trophy offered for the best exhibit of horticultural sundries: tools, garden furniture, tea houses, seats, sundials, birdbaths, blinds and stakes were all used to make up a very attractive and interesting display.

Mr. Robert Hayes was the winner of a trophy for a collection of Japanese Maples, dwarf Conifers, and Heaths, pleasingly arranged out-of-doors.

Yet another trophy was forthcoming, and this was won by Lord Leconfield (gr. Mr. Streeter), Petworth Park, Petworth, with a grand display of splendidly grown vegetables finely arranged on a flat table. This was a large exhibit and every item was of first rate quality.

Medal Awards.

Large Gold Medals.—To Messrs. Carter and Co., (1) for flowers and (2) for vegetables; Messrs. R. Bolton and Sons, for Sweet Peas; Donard Nursery Co., for Dieramas and hardy flowers; Messrs. Allwood Bros., for Carnations; Mr. Robert Hayes, (1) for alpines and shrubs and (2) for Japanese Maples and Conifers; Messrs. Dickson and Robinson, for flowers; Kings Acre Nurseries, for fruit trees in pots; Messrs. Mansell and Hatcher, for Orchids; Mr. Amos Perry, for hardy Ferns and water garden; Messrs. Toogood and Sons, for vegetables and flowers; Messrs. Dobbie and Co., for Roses; Messrs. J. Peed and Son, for stove and greenhouse plants; Mr. Reginald Winder, for model garden; Mr. E. Webb and Sons, for flowers, fruits and vegetables; Messrs. B. R. Cant and Sons, for Roses; and Messrs. Maxwell and Beale for Alpines.

Gold Medals.—To Messrs. Jas. Carter and Co., for formal garden; Messrs. W. H. Simpson and Son, Birmingham, for Delphiniums; Messrs. C. E. Simpson, York, for fruit; Messrs. J. Saul and Son, for shrubs; Mr. J. Klinkert, for topiary; Lakelands Nursery for formal garden; Mr. T. Smith, Newry, for rare shrubs and hardy flowers; Mr. W. Wells, for hardy flowers; Messrs. Little and Ballantyne, for shrubs; and Mr. H. Prins, for Gladioli.

Silver Medals.—To Messrs. H. Morse and Sons, for Roses; Messrs. Allwood Bros., for Dianthuses; Mr. R. Manson, for Roses; Mr. W. Tucker, for alpines; Messrs. Jarman and Co., for hardy flowers; Mr. W. Easlea and Son, for Roses; Messrs. Jones Bros., for hardy flowers; Messrs. Blackmore and Langdon for Phloxes; Messrs. R. Johnson and Son, for alpines; Mr. E. T. Rigg, for alpines; Mr. J. Slater, for Roses; Mr. H. Hemsley, for Sidalceas; Messrs. S. Broadhead and Son, for tennis courts; Mr. E. H. Williams, for shrubs; Messrs. Stuart, Low and Co., for Orchids; R. Astley-Bell, Esq., for Orchids; Messrs. Isaac House and Son, for Scabious; and Mr. Edwin Lomas, for Irises.

Bronze Medals.—To Mr. F. Rich, Mr. K. Thirkeldsen, Mr. G. Aitken, Miss McCormick; Messrs. Wheatcroft Bros., Messrs. S. Berkley and Co., Mr. H. S. Bevan and Miss Doris Bevan.

GUILDFORD AND DISTRICT GARDENERS'.

Apart from the Summer Show, which again surpassed all previous efforts, about 500 members and friends had the privilege of visiting the Rose Garden of Mr. Councillor W. Harvey, at Topcroft, Guildford, during June. This is a small garden in the town, and was a revelation of what can be accomplished by an amateur who loves Roses. Mr. Harvey is a member of the Council of the N.R.S. and has been a judge at the National Shows; he is one of the leading spirits of the newly-formed Rose Society in Guildford, an offshoot of the Gardeners' Association with which he is actively identified.

The next event was a visit on July 2 to the gardens of J. J. Joicey, Esq., The Hill, Witley, famous for its Orchids. The Hill is a modern mansion built by the late Birkett Foster, R.A., and is pleasantly situated in one of the Pine districts of Surrey. The situation undulates amidst natural scenery of great beauty which lends itself to the picturesque, and here nature and art have created a garden of infinite charm.

Under the skilful superintendence of Mr. J. Mackay, the gardener, choice plants, indoor and out, are brought to perfection. A bed of Roses, edged with Violas came in for much admiration, as did many other things, not forgetting a fine crop of Raspberries in the vegetable garden, which is reached by a pleasant path through a Pine wood. Apples had escaped the ravages of April frosts, and promised a good crop. Mr. Joicey has a superb collection of butterflies, containing over a million specimens, one of the largest in the world and valued at over £100,000. As a special privilege the visitors were allowed to inspect the collection which proved so fascinating as to restrict the time for the garden, but it added enormously to the enjoyment of the day.

The latest outing was on Saturday, July 16, when another party visited the gardens at Downside, Leatherhead, by kind permission of Lady Hulton. Here again is a magnificent garden under the efficient management of Mr. Dines, who conducted the visitors over the establishment. There is a good deal of glass at Downside and the houses are well stocked with fine displays of Streptocarpus, Gloxinias, Petunias, Carnations, Peaches, Nectarines and many other favourites; but the most striking feature consisted of wonderful Begonias in mixed colours. Outdoors, the gardens are well kept. The Loggia adjoining the mansion was effectively draped with rambler Roses in full bloom; a very pretty sight. Another attractive scene was the Italian garden with its large pool of Nympheas in flower. Clipped golden Yews enclosed in a tall Yew hedge proved another attraction. A break in the hedge revealed a bed of lovely Delphiniums with its contrast of blue—and in the distance a pergola of climbing Roses made a vivid splash of colour against a dark background.

Beds of dwarf Roses had suffered from recent storms but long stretches of American Pillar and kindred sorts were magnificent. In the rock garden and elsewhere many other subjects came in for admiration.

At the tea-table on each occasion Alderman W. T. Patrick, J.P., the indefatigable President, expressed thanks to J. J. Joicey, Esq., and Lady Hulton for permitting the respective visits.

The next outing will be to Petworth Park on Saturday, August 13.

SCOTTISH PANSY AND VIOLA.

At the second meeting of the season, held at Glasgow on Saturday last, five Pansy and four Viola seedlings were submitted to the Judging Committee and the following awards were made:—

Certificate of Merit: *Colin Wilson*, fancy Pansy, raised by Mr. Alexander Cochrane, Fauldhouse (Prussian blue blotches, margined French white, splashed wine colour on the top petals); *Alice Taylor*, fancy Pansy, raised by Mr. Quinten McFadyen, Carluke (dark velvety black blotches, edged cream); *Viola Jean Lister*, raised by Messrs. Alex. Lister and Son, Rothesay (creamy-white ground, edged blue).

FALKIRK AND DISTRICT ROSE.

In certain respects the Show held at Falkirk on July 23 compared unfavourably with those of recent years. On this occasion a large entry had been received but owing to successive rainstorms earlier in the week many competitors were unable to stage their blooms and several nurserymen had to cancel their entries of trade displays.

The quality of the Roses was much better than was expected. The best collection of Roses judged for artistic arrangement and quality of blooms came from Messrs. Thomas Smith and Son, whose outstanding flowers were Mrs. E. T. Hudson, Duchess of York, Eva Eakins, Angèle Pernet, Ruth, Mabel Morse and Shot Silk. Messrs. James Fairley and Co. were second, but the positions were reversed for six baskets. The Stanraer firm excelled in the classes for twenty-four and twelve blooms, of which the red shades were particularly strong. A huge bloom of Mrs. Hudson was selected as the best Rose in the Show, and Mrs. Barraclough, Courage, Mabel Morse, Capt. Ronald Clerk and Dr. A. I. Petyt also testified to a high standard of cultivation. The first prize in the white class was won by Messrs. Fairley and Co. with twelve clean blooms of Marcia Stanhope, and Messrs. G. Paton and Son proved to be the winners of the crimson class with a dozen fine blooms of Capt. Ronald Clerk.

Excellent Roses were also shown in the gardeners' and amateurs' classes where the chief prize-winners were Mr. D. Montgomery, Bainsford (eighteen blooms, 6 vases decorative and one vase yellow), Mr. W. R. Gair, Ardfour (twelve blooms H.T.'s), Mr. James Boyd (1 vase pink and a vase of singles), and Mr. William Short (twelve blooms, eight varieties; twelve blooms, six varieties, and ladies' Rose spray).

Although deficient in numbers and quality Sweet Peas made a fine show. In the open classes Messrs. Torrance and Hopkins were first with eighteen and twelve vases of which the best flowers were Magnet, Olympia, Firebrand, Mammoth, Grenadier, Geo. Shawyer and Austin Frederick. The winning six vases in the open class and the nine vases in the gardeners' and amateurs' sections were provided by Mr. Walter C. Turner who had also the credit of staging the best vase in the show. In addition to Austin Frederick which was thus honoured, that competitor staged splendid specimens of Colorado, What Joy, Charming, Avalanche and Geo. Shawyer.

Mr. James Smith, Darnvel, excelled in the three classes of Carnations, his best examples being Mrs. J. L. Gibson, Maisie Lowe, Gordon Douglas, Hornet and Mary Murray, while Mr. Hugh McCall, Linlithgow, had the distinction of winning first prizes in all the seven Pansy and Viola classes for which he had entered.

ROYAL CALEDONIAN HORTICULTURAL.

At the monthly meeting of this Society on July 5 there was a fine display of exhibits, and Messrs. Dobbie and Co. were awarded a Gold Medal for Sweet Peas and a Silver Medal for Delphiniums. Mr. George Balmer, Dean, Edinburgh, was awarded a cultural certificate for Jargonelle Pears, and there were exhibits of Gooseberries from Mr. F. Glass, Murrayfield, and Sweet Peas from Mr. Miller, Edinburgh.

The meeting was an open one, and among the questions discussed were stone-splitting in Peaches, diseases of Strawberries, the qualities of Cauliflower and Broccoli, and steam heating. Mr. W. J. Thomson, president, occupied the chair.

NATIONAL CARNATION AND PICOTEE.

July 19.—The annual show of the above Society, which was held at the Horticultural Hall, Westminster, on this date, in conjunction with the fortnightly meeting of the R.H.S., was a comparatively small affair. There were very few exhibitors, though the quality of the blooms reached a high standard of excellence. The Cartwright Challenge Cup was won by Messrs. Lowe and Gibson. The flowers were all shown in vases without the support of cards for the petals. An Award of Merit was given to Mr. G. D. Murray for a beautiful bright red-flaked yellow ground fancy, which bore no name.

All the first prizes in the open division were awarded to Messrs. Lowe and Gibson. These were mostly colour classes requiring seven blooms each of stated shades of colour. Their varieties were Mrs. R. P. Smith, pink or rose; Snowflake, white; Joan Wardale, dark red or maroon; Eldorado, yellow; Grenadier, red or scarlet; Elizabeth Shiffner, buff or terra-cotta; Grey Douglas. Any colour not above mentioned: John Ruskin, yellow-ground Picotee; Viceroy, yellow-ground Fancy; Mrs. Edmund Charrington, white-ground Fancy; and Ida Gray, any other ground Fancy.

In the amateurs' classes the quality of the blooms generally was exceedingly good. Mr. James Fairlie was first with three white-ground Picotees and showed beautiful blooms of St. Patrick and St. Osbaldiston which latter was the premier bloom. Mrs. Olaf Hambro was second. The best three yellow or buff-ground Fancies were Peace Treaty, Lady Shackleton and Mrs. J. L. Gibson, shown by Mr. Arthur Reynolds, while Mr. Fairlie was a close second. Mr. Arthur Reynolds, showing Evelyn White, Sir Douglas Haig and Maisie Low, was also first with white-ground Fancies, and Mr. Fairlie was again second.

The best three yellow-ground Picotees were fine blooms of M. Lennox, Togo and Mrs. J. J. Keen, shown by Miss Eliazbeth Shiffner. The Clove-scented Carnations were particularly good. Mr. Arthur Reynolds was first with My Clove, Steerforth Clove and Rose Clove, while Mrs. Olaf Hambro was second.

In the classes for one variety each of a specified colour or type Mr. James Fairlie was first with Snowflake, white self; Mrs. R. P. Smith, pink or rose self; Yvonne Thomas, any colour self not mentioned in the schedule; and Mrs. James Fairlie, white ground Fancy. Miss Elizabeth Shiffner was first with Mary Murray, yellow self; Elizabeth Shiffner, yellow self; Bookham Scarlet, red or scarlet self; and Mrs. R. P. Smith, pink or rose self. Gordon Douglas, shown by Mr. Edmund Charrington, was the best dark red or maroon self, and Skirmisher, shown by Mr. Arthur Reynolds, was the best yellow-ground Fancy, while Mrs. A. Brotherston, shown by Miss Elizabeth Shiffner, was the best Fancy, other than white or yellow-ground.

Mrs. H. Brookes was the most successful exhibitor in the third division and she won first prizes for two varieties of self Carnations, white-ground Picotees, yellow-ground Fancies and any other Fancies. Mr. F. Palmer was first with two varieties yellow ground Fancies, and with Clove-scented varieties. Mr. H. A. Knapton was first with yellow-ground Picotees and with self Carnations.

LONDON AND SOUTH OF ENGLAND VIOLA AND PANSY.

July 19.—This recently-formed special flower Society seems to have taken the place of the Southern Section of the National Viola and Pansy Society, for it is stated in the schedule of this first show, which was held at the Horticultural Hall, Westminster, on the above date, that the Southern Section of the National Society had transferred to the new organisation the fixture which it had originally arranged.

A comprehensive schedule of prizes was arranged and, although it was only a small show, the Committee may well feel encouraged to continue the fixture, for there were many exceedingly good exhibits of show flowers. While Violas are exceedingly popular garden flowers round about London and elsewhere in the South of England the qualities of this flower and its sister, the Pansy, are not so appreciated as in the North of England and in Scotland where the annual shows are of considerable importance. It is the province of this newest of special flower societies to educate the large show-attending public into the "points" of these flowers. This does not seem to have been fully appreciated by the responsible body, for, so far as we could discover, there were no schedules available for the inquiring visitor, nor did there appear to be any official in attendance ready and willing to impart information, while the exhibitors' cards bore scant information concerning the nature and objects of the various classes. But we have no doubt these matters have been duly noted and, with the experience gained at this first venture, more enterprise will be displayed at succeeding shows.

Award of Merit.

Pansy Malcolm Milner.—A splendid primrose-coloured variety, which has a neat yellow blotch at the base of each petal, and a broad blue margin. This fine flower was also awarded a Bronze Medal. Shown by Mr. A. E. German.

Competitive Classes.

The Holroyd Challenge Cup, offered for the best display of Violas and/or Pansies on a table space, which has to be won three times in succession, did not induce the competition such a trophy with a money prize of two guineas would in the north. Mr. Wm. Yandell was practically alone—another attempt was flattered by the judges with the third prize. The trophy and first prize were awarded to Mr. Yandell for a fascinating display of good blooms which included the following varieties:—Maggie Rutherford, John Adamson, Moseley, Ideal, Mrs. Ritchie, and the beautiful Malcolm Milner which received an Award of Merit. Mr. Yandell also had an extensive collection of the high merit which we have so often admired at shows in the hall and elsewhere.

In the remaining classes trade exhibitors were excluded, and in these Mr. A. E. German, Hornchurch, showed many beautiful flowers. His three vases of exhibition Violas, nine blooms of each, were especially beautiful. The varieties were:—Mrs. James Scalley, Lily Stark and Drummer Wilson. Mr. M. Mitchener was a good second. The best of many exhibits of twelve blooms of exhibition Violas, three blooms of four distinct varieties, were also shown by Mr. German, and these included Mrs. Walter Nisbett, Archibald Campbell and Rose Bell. Mr. C. Luckin was second in this strong class. Mr. GERMAN was also first with one vase of a yellow-ground, edged, exhibition Viola, showing Mrs. Andrew Stevenson; for one dark exhibition Viola, showing Milton Jumbo; a pan of Fancy Pansies and a vase of yellow Violas.

Mr. M. MITCHENER had the best six vases of exhibition Violas and he included splendid blooms of McEwan, Annie Hamilton and Flora Macdonald. Mr. W. R. CUMMINS was second. Mr. T. WILSON, Neilston, was first with Moseley Perfection in the class for a pan of yellow bedding Violas, where Mr. GERMAN was second, and, showing William Barr, led for a vase of white exhibition Violas, and was second with a pan of Fancy Pansies. Mrs. E. NOBEL, Enfield, won first prizes for six pans and for three pans of bedding Violas with very attractive exhibits. Her varieties included Amy Barr, Kingcup, W. H. Woodgate, Archie Grant and David Beatt.

ANSWERS TO CORRESPONDENTS.

ANTIRRHINUMS AND LOBELIAS DAMAGED.—*G. D.* The white patches on some of the Antirrhinum leaves sent suggested that they have been growing in a cold frame or greenhouse and had not been properly hardened off before they were planted out, and then became scorched by the sun. This will soon happen in June or July when the sun is strong for an hour or two. By far the larger number of the other damaged leaves were dark brown or black, the upper surface darker than the under one. Many of them were hard and crumpled without any moisture in them. These symptoms indicate that something has extracted the moisture from the leaves. Some one may have watered them overhead with a strong solution of sulphate of ammonia or nitrate of soda to make them grow; or they may have been dusted or watered with a solution of alum (sulphate of aluminium) to kill slugs. These materials are not exactly poisons, but as they extract the moisture of the leaves the results would be the same. The Lobelias must have been treated in the same way.

APPLE LEAVES SCORCHED.—*T. W. S.* The scorching might be either spray injury or leaf scorch, but probably the latter. This is not a fungous disease but a physiological disorder, the cause of which is not fully understood. In a good many cases it may be cured by the use of a potash fertiliser for two or three years in succession, sulphate of potash being best for the purpose. The trouble is most common during a drought.

ARBUTUS MENZIESII FAILING.—*R. R. S.* The shoot of Arbutus Menziesii received for examination has been killed by a species of fungus, but as there was no fructification of the fungus present it is not possible to identify the species. The diseased part should be cut out well beneath the diseased point and the wound covered with coal tar. This may save the living shoots, although there is the possibility that the roots are diseased, in which case the plant is almost sure to die.

CULINARY PEAS.—*A. B. J.* We believe Nos. 1 and 2 are Pilot, and No. 3, Senator.

CHERMES ON PINE SHOOT.—*J. C. A. C.* The Pine shoot received for examination is infested by a species of Chermes, apparently C. pini. The only means of dealing with this insect pest is to spray the plants several times at intervals of a few days with a suitable insecticide; a good paraffin or nicotine wash will answer very well.

CUCUMBERS FAILING. *C. B.* The Cucumber fruit sent is suffering from Gummosis, caused by the fungus Cladosporium cucumerinum. This disease occurs quite frequently in cold, wet houses. It will disappear if you increase the heat and keep the atmosphere reasonably dry. Some measure of control may be obtained by dusting the plants with green sulphur, which can be obtained from most fungicide manufacturers. Real control can only be obtained by heating the houses.

FLOWERS FROM A TOWN GARDEN.—*A. R., Bermondsey.* The Delphiniums were quite good and you have every reason to be proud of the way in which you have grown them in a Bermondsey garden. The Roses, too, were of good size and substance; the variety is Mabel Morse. We were very pleased to receive the flowers from you, and congratulate you upon your success in your "small back garden."

GRAPE SPOT.—*A. G.* The berries are affected with spot disease, caused by the fungus Gloeosporium ampelophagum. Dust the leaves and bunches with flowers of sulphur at intervals of ten days, or spray with liver of sulphur at a strength of half-an-ounce in two gallons of water. Next winter, when the vines are dormant, spray the rods with iron sulphate in solution.

GLOXINIAS ATTACKED BY EELWORM.—*C. F. K.* It is difficult to free plants from eelworms when once they are infested. We think your best plan would be to destroy all the affected plants and use entirely fresh soil for any new ones introduced.

LILIUM CANDIDUM DISEASED.—*C. G.* The Lily is attacked by the fungus Botrytis. The black bodies on the leaves and buds are sclerotia—resting bodies. Destroy all affected plants and do not grow Lilies in the same ground again.

NAMES OF FRUITS.—*J. N. M.* The Peach sent for naming was decayed. From its pale skin it may be Noblesse. Dressings of lime or lime rubble are not sufficient to prevent the stones of Peaches from splitting. Good drainage and healthy root action are other important factors, and many experienced Peach growers are of opinion that artificial pollenation adds weight to the fruit and often prevents the stones from splitting.

NAMES OF PLANTS.—*F. J.* 1, Cotyledon simplicifolia; 2, Salvia argentea; 3, Celmisia holosericea; 4, Teucrium fruticans.—*D. L.* Erigeron philadelphicum, a well-known plant. —*J. B. P.* 1, Calceolaria integrifolia; 2, Francoa sonchifolia; 3, Erigeron macranthum; 4, Rudbeckia speciosa; 5, Lychnis coronaria; 6, Mimulus cupreus.—*G. B.*, 1, Taxodium distichum; 2, Cynoglossum amabile; 3, Crucianella stylosa; 4, Abutilon Sawitzii; 5, Pteris cretica albo-lineata; 6, P. serrulata cristata; 7, Ribes nigrum.

ONIONS DISEASED.—*F. J. B.* The larger Onion is attacked by soft rot, a disease caused by bacteria. The smaller one is attacked either by the same disease or by the fungus Sclerotium cepivorum. All diseased plants should be destroyed and the effect of a long rotation tried.

PEAR LEAVES BLISTERED.—*A. H. B.* The galls on the Pear leaves are due to the leaf-blister mite, Eriophyes pyri. Pick off and burn the affected foliage, and next winter spray the trees with kerosine emulsion.

PEACH LEAVES BLISTERED.—*A. H. B.* The Peach leaves are affected with the fungus Exoascus deformans. This disease is always in evidence when there is a sudden fall in the temperature, especially when cold winds prevail, but it is checked by an increase of temperature. All affected leaves should be removed and burnt. Spraying the trees with Burgundy mixture just before the leaf buds burst is a preventive measure that has proved very satisfactory; the mixture is rendered more effective if three-quarters of a pint of milk is added to every three gallons, as this addition increases its adhesiveness.

PROPAGATING CLIANTHUS PUNICEUS.—*F. J.* Cuttings of Clianthus puniceus magnifica are easily rooted from May to July, and under proper conditions ninety per cent. of the cuttings will strike. Shoots about six inches in length taken with a small heel of last year's growth, are preferable; they should be prepared in the usual manner by removing a few of the lower leaves and making the heel portion perfectly smooth with a sharp knife. Side-shoots of this year's growth may be used with equally good results if a large quantity of plants is required. In either case, the cuttings should be inserted in pots in a compost containing at least three parts sand and plunged in ashes in a cold frame. As is the case with all soft-wooded cuttings, they need attention at least once daily, shading them from bright sunshine, and occasionally damping them overhead to maintain a moist atmosphere. Rooting usually takes place in about three weeks; the plants should then be grown on in cool conditions and finally hardened.

RASPBERRY CANES FRUITING UNSATISFACTORILY. —*M. L. N.* The imperfect maturity of the Raspberry fruits is doubtless due to the fact that the canes were derived from a bad stock. Your best plan is to obtain fresh canes of a good variety from a reliable source.

SWEET PEA FOLIAGE TURNING YELLOW.—*T. P. and J. N. M.* We have seen several instances of the bleaching of the foliage of Sweet Peas, and in almost every case it would appear that the affected plants were those which suffered in some measure from the cold weather experienced earlier in the season. It is obvious that sunshine is not the cause; the trouble may, however, be due to certain of the plants finding too much manure in parts of the trench.

TOMATOS FAILING TO COLOUR.—*T. W. S.* The lack of colour in the fruits of Tomatos is generally ascribed to the absence of potash in the soil. The deficiency may be supplied by a top-dressing of wood ash or a light dressing of sulphate of potash. In the case of disease, spray the plants with a solution of potassium sulphide.

WALLS OF FLINT AND CHALK.—*J. M. B.* We do not think that chalk would have sufficient cohesion to enable you to build a wall of flints, unless it were ground by machinery into a condition of mortar, with water added to it. The difficulty could be got over by a handy man to pound up the chalk and then sift out the hard pieces. To six or eight parts of this one part of slaked builder's lime could be added, well mixed and then brought into a condition of mortar by adding sufficient water and working it well with a spade. The pieces of flint could then be embedded in this mortar. In the North of England and in Scotland, earth or turf dikes are built by simply marking off the site of the wall and then digging sods from either side with which to build it. There is thus a ditch on either side, making the dike appear higher than it really is. Only low dikes would be built if Hawthorn is to be planted on the top. Higher dikes are sown with a line of Gorse seeds along the top. Dry stone dikes are built with stones obtained in the neighbourhood or gathered off the fields. Gorse on the top of the wall would give much more shelter than a bare wall. If Hawthorn is preferred the wall must not be very high, because its roots require more moisture than those of Gorse. The dike or wall should be considerably wider at the bottom than at the top, and if well-built, would be practically everlasting if the Hawthorn is kept as a hedge of moderate height. No large growing trees should be planted on the wall because their swelling roots would burst it. Plenty of good soil should be put between the two faces of flint.

Communications Received.—B. B.—F. B.—T. S.—S. J. T.—W. H. B.—R. D.—E. N. W.—C. and S.—F. E. S.—A. G. C. H.—R. C.—W. F. Y.—A. M. S.—H. E. E.—H. J. T.—L. L.—A. C. B.—A. B. J.—A. T.—F. J.—T. H.—A. O. M.—J. C.—B. C.—C. I.

MARKETS.

COVENT GARDEN, Tuesday, July 26th, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d s. d.
Adiantum cuneatum per doz.	10 0–12 0
—elegans	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray	
—12's, 15's	5 0–7 0
Crotons, doz.	30 0–45 0
Cyrtomium	10 0–25 0
Fuchsias, 48's, per doz.	15 0–18 0
Heliotropes, 48's, per doz.	15 0–18 0
Hydrangeas, pink, 48's, per doz.	18 0–24 0
—blue, 48's, per doz.	24 0–30 0
—white, 48's, per doz.	18 0–24 0
—larger sizes, each	4 0–5 0
Marguerites, 48's, per doz.	12 0–15 0
Nephrolepis in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pelargoniums,	
—Zonal, 48's, per doz.	9 0–10 0
—Ivy-leaf, 48's, per doz.	10 0–15 0
Pteris, in variety	10 0–15 0
—large, 60's	5 0–6 0
—small	4 0–5 0
—72's, per tray of 15's	2 6–3 0
Rhodanthe, white and pink, 48's, per doz.	9 0–10 0
Roses, Polyanthas, 48's, per doz.	15 0–18 0
Verbenas, pink, 48's, per doz.	10 0–12 0
—scarlet, 48's, per doz.	12 0–15 0
Viscarias, in var., 48's, per doz.	10 0–12 0
—60's, per doz.	4 6–5 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Achillea, per doz. bun	4 0–6 0
Adiantum decorum, doz. bun.	9 0–12 0
—cuneatum, per doz. bun.	6 0–8 0
Alstroemeria per doz. bun.	9 0–12 0
Asparagus plumosus, per bun., long trails, 6's	2 0–2 6
med. sprays	1 6–2 6
short „	0 9–1 3
—Sprengeri, bun. long sprays	2 0–2 6
med. „	1 0–1 6
short „	0 6–1 9
Asters, white, per doz. bun.	6 0–10 0
—coloured, per doz. bun.	6 0–10 0
Carnations, per doz. blooms	1 3–3 0
Chrysanthemum Sanctity, per doz. blooms	3 0–5 0
—Mrs. J. Pearson, per doz. bun.	9 0–12 0
Clarkia, per doz. bun.	4 0–6 0
Coreopsis, per doz. bun.	1 0–1 6
Cornflower, blue, per doz. bun.	1 6–2 6
—pink, doz. bun.	2 0–2 6
Croton leaves, per doz.	1 9–2 6
Daisies, white, large, doz. bun.	2 6–3 6
Delphinium, blue, per doz. bun.	6 0–9 0
Ferns, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	8 0–9 0
Gaillardia, per doz. bun.	2 0–2 6
Gladiolus, The Bride, per doz. bun.	9 0–12 0
— giant varieties, per doz. spikes—	
—pink shades	2 6–4 0
—scarlet	3 6–4 6
—white	4 0–4 6
Gypsophila elegans per doz. bun.	6 0–8 0
—paniculata	10 0–12 0
Heather, white, per doz. bun.	12 0–18 0
Iceland Poppies, per doz. bun.	2 0–2 6
Lapagerias, per doz. blooms	2 6–3 6
Larkspur, various, per. bun.	6 0–8 0
Lilium lancifolium album, per bun.	3 6–4 0
—short, per doz.	3 0–4 0
—rubrum, long, per bun.	4 6–5 0
—short, per doz.	2 6–3 0
—longiflorum, long, per doz.	2 0–2 6
—short, doz. blooms	1 6–2 0
Lily-of-the-Valley, per doz. bun.	30 0–36 0
Marigolds, per doz. bun.	4 0–5 0
Myrtle, green, per doz. bun.	1 6–2 0
Orchids, per doz.	
—Cattleyas	36 0–48 0
—Cypripediums	6 0–8 0
Roses, per doz. blooms—	
—Columbia	3 0–4 0
—Richmond	2 0–2 6
—Madame Butterfly	2 0–2 6
—Golden Ophelia	2 0–3 0
—Mrs. Aaron Ward	1 6–2

Cut Flowers, etc.—Cont.

Roses, per doz.	s. d. s. d.
—Madame Abel Chatenay	1 6–2 0
—Hoosier Beauty	2 6–4 0
—Liberty	1 6–2 0
—Molly Sharman Crawford	1 6–2 6
—Premier	— 3 0
Smilax, per doz. trails	4 0–6 0
Statice sinuata, mauve, per doz. bun.	12 0–24 0
—latifolia, per doz. bun.	12 0–15 0
Scabiosa caucasica, per doz. bun.	3 0–4 0
Stephanotis, per 72 pips	2 6–3 0
Stock, per doz. bun.—	
—double white	6 0–9 0
— — mauve	12 0–18 0
— — pink	12 0–18 0
Sweet Peas, in variety	4 0–10 0
Sweet Sultans, white, per doz. bun.	6 0–10 0
—mauve, per doz.	6 0–10 0

The improved weather conditions have increased the supply of all outdoor blooms, and for these prices were much easier this morning. Carnations are still abundantly supplied. Plenty of Roses were on sale this morning, but blooms of the best quality are still retaining their prices; outdoor varieties are generally poor in quality and long-stemmed blooms are most in demand. Cornflowers and Delphiniums are generally poor in quality just now. Amongst the Giant Gladioli, pink varieties are considerably more plentiful; Halley and Prince of Wales are arriving in excellent condition. Montbretias are also good in quality and more Gypsophilla paniculata is being offered, including the double variety. The latest arrivals in this department are Statice latifolia and some disbudded blooms of the white Chrysanthemum Sanctity and some very good spray Bronze Mr. Jack Pearson, while Lavender is increasing in quantity daily.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Gladstone, ½-sieve	4 0–6 0
—Green	1 6–3 0
Apples, New Zealand—	
—Newtown	19 0–20 0
—Sturmer Pippin	17 0–21 0
—Statesmen	20 0–23 0
—Rome Beauty	18 0–20 0
— Portugal, per case	14 0–16 0
Bananas	14 0–22 0
Black Currants—	
—English. per ½-bushel	7 0–8 0
—chips, per lb.	0 6–0 7
Cherries, English—	
—Napoleon, per strike	5 0–8 0
—Noble	6 0–10 0
Currants, Red, 3 lb. chip	1 0–1 6
Figs, per doz.	6 0–18 0
Gooseberries—	
—White Lions, ½-sieve	4 0–5 0
—Cousin's Seedling	5 0–7 0
—Leveller, per lb.	0 3½–1 3
—red, ½-sieve	4 0–6 0
Grape Fruit—per case	
—Blue Goose	30 0–40 0
Grapes, English	
—Black Hamburgh, per lb.	1 6–4 0
—Alicante	1 6–3 0
—Gros Maroc	1 6–3 0
—Muscat	2 6–8 0
—Canon Hall	4 0–8 0
Lemons, Messina Boxes	9 0–20 0
—Naples, per case	20 0–26 0
Melons, each—	
—English and Guernsey	2 0–7 0
Canteloup, each	3 6–8 0
Oranges, per case—	
—Cape Navel	15 0–20 0
Nectarines, doz.	6 0–18 0
Peaches, per doz.	6 0–21 0
Pears, French—Williams's Bon Chretien, per box	5 0–8 0
Pines, case	21 0–40 0
Plums—	
—English, Early Rivers, ½-sieve	5 0–6 0
—Spanish Gages, ½-sieve	4 0–10 0
—Washington, ½-sieve	4 0–6 0
—Portugal Gages, ½-sieve	4 6–6 0
Raspberries, 2 lb. chip	1 6–2 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey	0 8–0 9
—Worthing Outdoor	0 4–0 5
Beets, per cwt.	5 0–6 0
Cabbage, per doz.	2 0–2 6
Carrots, New	3 0–4 0
Cauliflowers—	
—English, per crate	4 0–6 0
Cucumbers, doz.	4 0–6 0
—Flats, 36's, 42's	14 0–18 0
Leeks, per doz.	2 0–2 6
Lettuce, round, per doz.	0 9–1 0
—long	1 0–2 0
Mint, per doz.	1 6–2 0
Marrows, per doz.	2 6–3 3
Mushrooms—	
—cups	1-9–2 6
—broilers	1 0–1 3
—field, per lb.	0 8–1 0
Onions—	
Egyptian	12 6 14 0
Parsnips, per cwt.	4 0–4 6
Peas, per bushel	8 0–12 0
Potatos—	
English	9 0–10 0
Radishes, per doz.	1 0–2 0
Savoys, per tally	8 0–12 0
Tomatos, English—	
—pink	4 0–5 0
—pink and white	4 6–5 6
—white	3 6 4 0
—blue	3 0–3 6
—Guernsey	3 0 4 0
—Dutch	3 0–3 6
—Italian, 18 lbs.	2 6 3 0
Turnips, per cwt.	3 6–4 6

Large quantities of imported produce, mainly Plums, Gages and Pears from the Continent, are arriving. Some sections report fairly good trade conditions, but no doubt a period of sunshine would materially help matters all round, as the market has been feeling the restricted buying due to the cold and wet weather we have experienced recently. The demand for choice fruits such as Peaches, Nectarines, Grapes, Melons and Figs is slackening with the end of the London "season." English Apples and Plums have commenced but, of course, quantities are very small at the moment. The last shipment of Apples from New Zealand is ~~now~~ on the way and prices are keeping fairly firm. Forced Beans are now difficult to sell in competition with outdoor French and Runners. Peas keep scarce and dear, while Marrows are abundant and cheap. Mushrooms meet a moderate demand, the warmer weather adversely affecting their condition on arrival. Tomatos, after a slow demand, are now a slightly better trade. Cucumbers have also shared in the improvement. Black Currants are now not so plentiful and the crop is drawing to a close. Salads are in better demand. Green vegetables sell very slowly, but Green Peas are wanted; good Peas are scarce and dear.

GLASGOW.

Business in the cut flower market continued quiet and prices again favoured buyers. For the third week in succession Carnation supplies were excessive and values reached the lowest levels of the season—9d. to 1/3 per doz. Roses were likewise cheap at 1/- to 2/-, while Sweet Peas were only worth from 2d. to 6d. per bunch. Peach Blossom Gladiolus ranged from 4d. to 8d. per doz. spikes and The Bride 6d. to 8d.; Lilium Harrissii averaged 2/- per bunch; Anemones, 6d. to 8d.; Gypsophila, 2d. to 3d.; Stocks, 2d., large 4d. to 6d.; Morning Star, 2d. to 3d. and Asparagus from 6d. to 1/-.

Although the holiday season is at its height, a fair turnover was experienced in the fruit market. Table Strawberries sold at 10d. to 1/6 per lb., fair qualities 5½d. to 8d.; Red Gooseberries, 6/6 (½ bushel), green 4/-, and Sulphur 4d. to 6d. per lb.; Raspberries, 1/-; Scottish Black Currants (picked), 1/- to 1/6; English 7d. to 9d.; red, 7d.; Gages, 14/- to 18/- (sieve); Cherry Plums, 7/6 (½ bushel) French Blue ditto, 9/-; Melons, 12/- to 15/- per case; Pineapples, 7/- per box of 12; Muscat Grapes, 3/6 per lb.; Black, 1/6 to 2/-; Sunkist Oranges, 30/- per case; South African, 34/- to 36/-; New Zealand Apples (Sturmer Pippins), 16/- to 19/6; and Canary Bananas 16/- to 24/-; Scottish Tomatos declined to 5d. to 7d. per lb. at the beginning of the week and recovered to 6½d. to 8d. French William Pears made 9/- per box (48's).

Prices of vegetables generally moved in a downward direction. French Beans were only worth 8d. per lb. as against 1/6 in the preceding week; Cauliflower declined to 2/6 per doz.; Lettuce, 1/- to 1/6; Dutch Turnips, 3/- per doz. bunches, and Syboes, 6d. to 8d. per bunch.

THE LATEST TRADE MARKS.

This list of Trade Marks of interest to readers has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

479,064.—Illustration of a caterpillar-like insect, a wreath, top hat, and the word "PESTA" for insect-destroying preparations in class 2.—Hickson and Partners, Limited, 8, Ings Lane, Castleford, Yorkshire. July 13.

RILISO.

479,740.—Cutlery and edge tools in class 12, which includes shears, scythes, etc.—Hugo Linder, trading as Hugo Linder, Deltawerk, Gasstrasse 6 to 18, Solingen, Germay. July 6.

INDECA.

477,905.—All goods in Class 12, which includes shears, scythes, etc.—George H. Alexander Machinery, Limited, 83 and 84, Coleshill Street, Birmingham. July 13.

MUSTARD CLUB.

481,053.—All goods in Class 12, which includes shears, scythes, etc.—J. and J. Colman, Limited, Carrow Works, Norwich; and 108, Cannon Street, London, E.C.4. July 13.

SCHEDULES RECEIVED.

Hull and East Riding Chrysanthemum Society.—Twenty-seventh Chrysanthemum Show to be held in the City Hall, on Wednesday and Thursday, November 16 and 17. Secretary, Mr. E. Mennell, 10a, Spring Street, Hull.

Birmingham Chrysanthemum Society.—Sixty-third Show to be held in Bingley Hall on Tuesday, Wednesday and Thursday, November 15, 16 and 17.—Secretary, Mr. A. Noakes, 148, Bristol Street, Birmingham.

Ayr Chrysanthemum Society.—Twenty-first Show to be held in Carrick Street Halls on Wednesday, November 16.—Secretary, Mr. J. S. Smith, 44, Robsland Avenue, Ayr.

Accrington and District Chrysanthemum Society.—Show to be held in the Town Hall on Saturday, November 5.—Secretary, Mr. A. A. Crabtree, Arden View, Hodder Street, Accrington.

THE Gardeners' Chronicle

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·4°.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 3, 10 a.m. Bar. 30·4. Temp. 65°. Weather, Sunny.

Celery Blight. MARKET gardeners and private gardeners will not readily forget the losses which were suffered in 1926 in most gardens where Celery was grown. Celery Blight, a disease which is always with us, but which in most years contents itself with but a moderate toll of destruction, was at the height of its virulence. The weather which we are experiencing now is calculated to cause a repetition of destruction in the present crop; for the Celery-leaf Spot or Blight fungus spreads fastest when there is plenty of moisture for the germination of its spores and not enough warmth to promote rapid growth of the Celery plant. Mr. Stirrup and Mr. Ewan of the Midland Agricultural and Dairy College have, however, recently published[*] the results of experiments which show that this disease may easily be kept in check and every gardener should take careful and early note of their advice. The disease is apparently always present in the "seed." Efforts made by Messrs. Stirrup and Ewan to sterilise the seeds have met with only partial success. We think, however, that further trial with disinfectants other than those which they tried might prove effective. From our own experience, the best seed steriliser is chloride of lime (bleaching powder). By the use of this substance, which must, of course, be employed in very dilute solution, it is possible to sterilise completely the surface of certain seeds and we hope therefore that the authors will try its effects on Celery. Pending an effective method of seed sterilisation recourse must be had to close observation and early and frequent spraying. Celery Blight may make its appearance on the seedlings whilst they are yet in the frames. The disease is easily recognised. Pale green areas appear on the leaves and leaf stalks. They increase in size and become studded over with minute black spots—the spore cases—whence presently emerge vast numbers of microscopic, thread-like spores. Sometimes the spots on the leaves assume a pale brownish colour and then the grower usually describes the disease as Rust. The damage done by the Blight fungus is not to be confused with that done by the Celery fly. The latter is a miner and destroys the inner tissues of the leaf so that the damaged patches are translucent, whereas the diseased areas are not. The most successful sprays are Bordeaux mixture and Burgundy mixture, either of which may be bought ready made or made-up in the garden. The Bordeaux mixture recommended is 4 : 4 : 40; *i.e.*, four pounds each of copper sulphate and quick lime and forty gallons of water. For making Burgundy mixture four lbs. of copper sulphate; five lbs. of washing soda and forty gallons of water are required. The authors recommend the use of the mixture at the rate of thirty or forty gallons per acre when the plants are young and about double this rate when the Celery is fully grown. In unfavourable seasons spraying must be done several times if the fungus is to be kept in check. It is quite evident that the cost of the operation is so small that it will be returned many fold in the increased yield and therefore gardeners who neglect this precaution have only themselves to blame if they lose this very valuable winter crop. Walk along the Celery trenches now and the odds are that the disease will be found to be already making headway. If this be so, spraying should be resorted to without delay.

Our Fruit Crop Reports.—We hope to publish our Report on the Condition of the Out-door Fruit Crops of the British Isles in our issue of August 13. Readers desirous of obtaining extra copies should place orders with their newsagents or with the Publisher, *The Gardeners' Chronicle*, 5, Tavistock Street, Covent Garden, W.C. 2.

Condition of the Hardy Fruit Crops.—In view of the imminent publication of our annual report on the hardy fruit crops of the British Isles, it is of interest to notice that the Ministry of Agriculture has issued a statement (end of July) to the effect that culinary Apples are a variable crop and there has been much fruit dropping; Bramley's Seedling carries a poor crop, while Early Victoria, Lane's Prince Albert, Lord Grosvenor and Lord Derby have fair to good crops; Annie Elizabeth, fair and Newton Wonder, very patchy. There has been much fruit dropping among dessert Apples, but Worcester Pearmain, James Grieve and Ellison's Orange carry good crops; Cox's Orange Pippin and Allington Pippin, fair to good, and Beauty of Bath, fair crops. Pears carry light crops, Conference and Fertility being the most promising varieties. Patchy crops of Plums are reported with Czar and Early Rivers good; Monarch and Pond's Seedling fair; Victorias and Pershore, poor. Gage Plums are a poor crop and Damsons generally carry light crops.

Guildford Rose Show.—The new Guildford and District Rose Society will hold its first exhibition on September 14 in the grounds of Weir House, Millmead, kindly lent for the occasion by Lawrence Powell, Esq. Mr. Courtney Page will open the exhibition at 2.30 p.m. A dozen classes have been arranged and Gold, Silver-gilt and Silver Medals are offered for the best trade displays of Roses. Entries close on September 10 and the Secretary is Mr. J. McCraken, Ardwell, London Road, Guildford.

Tropical Economic Plants at Swansea.—A most interesting and instructive exhibit of economic plants was arranged by the Swansea Parks Department at the Royal Welsh Show, which opened at Singleton Park, Swansea, on July 30. The exhibit covered an area of thirty feet by six feet and contained no fewer than sixty species. Throughout the show the exhibit was a great attraction and Mr. D. Bliss, the Swansea Parks Superintendent, must have been gratified by the result of his effort and the award of a Special Gold Medal. As an exhibit of this kind is rarely seen outside a Botanic Garden, we append the names of the plants it contained:—Gomuti Palm, Arenga saccharifera; Turmeric, Curcuma longa; Tous les Mois, Canna edulis; Castor Oil, Ricinus communis; Egyptian Cotton, Gossypium hirsutum; Quinoa, Chenopodium Quinoa; Sweet Cassara, Manihot palmata; Sugar Corn, Sorghum saccharatum; Guava, Psidium Guava; Bowstring Hemp, Sansevieria zeylanica; Ipe Hemp, Sansevieria cylindrica; Chick Pea, Cicer arietanum; Lemon Grass, Andropogon schoenanthus; Indigo, Indigofera tinctoria; Vanilla, Vanilla planifolia; Chillies, Capsicum annum; Rice, Oryza sativa; Jute, Corchorus capsularis; Teff, Eragrostis abyssinica; Pita, Bromelia magdalense; Date Palm, Phoenix dactylifera; Dragon Tree, Dracaena Draco; Tobacco, Nicotiana Tabacum; Cape Gum, Acacia horrida; Para Rubber, Hevea brasiliense; Silk Cotton, Bombax malabaricum; Rose Apple, Eugenia Jambos; Ramie, Boehmeria nivea; Anatto, Bixa Orellana; Coco, Erythroxylon Coca; Sweet Sop, Anona squamosa; Hemp, Cannabis sativa; Liberian Coffee, Coffea liberica; Sugar Cane, Saccharum officinarum; Sea Island Cotton, Gossypium barbadense; Arabian Coffee, Coffea arabica; Lagos Rubber, Funtumia elastica; Soy Bean, Glycine hispida; Chinese Yam, Dioscorea Batatas; Tamarind, Tamarindus indica; Indian Corn, Zea Mays; Edible Colocasia, Colocasia esculenta; African Oil Palm, Elaeis guineensis; Canary Banana, Musa Cavendishii; Papyrus, Cyperus Papyrus; Giant Hemp, Furcraea gigantea; Panama Hat Palm, Carludovica palmata; Ginger, Zingiber officinale; Sisal Hemp, Agave sisalana; Cascarilla, Croton Eluteria; Deccan Hemp, Hibiscus cannabinus; Cape Gooseberry, Physalis peruviana; Sudan grass, Sorghum sudanense; Chinese Indigo, Polygonum tinctorium; Paraguay Tea, Ilex paraguayensis; Sugar Beet, Beta maritima variety; Aleppo Millet, Sorghum halepense; Socotrine Aloes, Aloe succotrina; Sapodilla Plum, Achras Sapota; Guinea Corn, Sorghum vulgare; Coco, Yams, etc.

Scottish Potato Trials.—In response to the invitation of the Board of Agriculture for Scotland a representative company of raisers, merchants and farmers assembled at East Craigs, Corstorphine, to witness a public demonstration regarding the varieties of Potatos that are under observation this year at the Seed-Testing and Plant Registration Station. Mr. Miller, in the absence of Mr. Anderson, conducted the visitors over the grounds which have been changed to a site about a mile west of the field occupied by the previous trials. During early winter fifteen tons of manure per acre were supplied, while eight cwts. per acre of artificial Potato manure were distributed in the drills at planting time. The tubers were spaced out fifteen inches apart in drills twenty-seven inches apart. Before registration a variety is subjected to a three-years' test. In the first year's trials the entries were greatly reduced and there were few seedlings which showed a clean bill of health, there being a greater amount than usual of a type of Mosaic disease which causes the early death of the plant. Out of forty-five varieties submitted, twelve were old varieties under a new name, figures which compare with thirty-two out of ninety-six last year. The most promising specimens were three seedlings of an early type sent by Sir J. Gore-Booth, Sligo, and an immune and distinct variety raised by Mr. C. T. Spence, Dunbar. In the second-year trial plots, the efforts of raisers to produce an immune Epicure were reflected in four seedlings of Mr. McKelvie's. The best of the quartette was No. 520, which in twelve different trials in the British Isles produced as good a crop of ware as Epicure when both were lifted in an immature state. It has the merit of being immune and the tubers are indistinguishable from those of Epicure. Although a little later than Epicure, No. 441 had a bigger top and if left to ripen gave as big a crop as the older variety. Another satisfactory seedling was provided by Mr. Archibald D. Findlay, Auchtermuchty. This Potato is of the British Queen type, oval in shape, distinct and immune. The outstanding variety in the third-year registration trials was No. 480 which has now been named Arran Banner, by Mr. McKelvie. It is a main-crop variety, quite distinct from Arran Consul and may be described as an improved Arran Chief. It stands up well against Mosaic and Leaf-roll diseases and the stock has not shown a bad plant in the four years it has been under observation. In twenty trials this year it has consistently topped the list and as an example of its heavy cropping it may be recalled that the yield from one plant last year amounted to fourteen pounds, all ware size. A limited quantity of seed was offered last spring at £50 per stone. The only other Potato of note in this section was Doon Star, raised by Messrs. McGill and Smith, Ayr. This is an oval-shaped main-crop variety of the Majestic type with a good top and an excellent cropping reputation. Nothing was known of the cooking quality of these varieties. Among the early varieties in their third year, Herald, also belonging to the Ayr firm, is being tested to decide if it is better than Epicure, Sharpe's Express and Eclipse. The top is good and the constitution healthy, while the cooking quality is described as good. No. 408, another of Mr. McKelvie's productions, is of kidney shape, with a very early haulm, but not so early as Epicure. The fact that the flesh is white is a point in its favour and it may possibly rank as a competitor to Duke of York. No fewer than eighty inspectors are engaged this season in the work of rogueing farm crops in Scotland.

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[*] Report on Celery Blight and its Prevention. *Bulletin No.* 14. Midland Agricultural and Dairy College, Sutton Bonington, Loughborough.

Crops in Northern Ireland.—The total area of ploughed land, including fruit, in Northern Ireland is this year 20,000 acres less than in 1926. A decrease of 10,500 acres has occurred in the area under Oats. The extent under the other cereal crops, however, is very little changed from last year. Potatos remain at practically the same area as in 1926, but a decline of 3,500 acres is shown in the area under Turnips, while Cabbages have been grown on over 900 acres less than a year ago. A further reduction of over 4,000 acres has taken place in the area under Flax, which is this year the smallest ever sown in Northern Ireland. There has also been a reduction in the area under both rotation and meadow hay. Against these reductions, however, an increase of nearly 31,000 is recorded in the number of cattle.

R.H.S. Teachers' Examination—At the Teachers' Examination in School and Cottage Gardening, held by the Royal Horticultural Society, on March 26, 1927, no fewer than 243 candidates were examined; 123 were placed in the First Class, fifty-five in the Second, twenty-nine in the Third, and twenty failed. Mr. Arthur Thomas, of Sun Hill, High Street, Aberystwyth, and Mr. J. B. Hindley, of Oakfield, Woodhall Spa, will receive Silver-Gilt Medals as being equal first. The examiners report a marked improvement over last year and some of the papers were very good. Weakness of knowledge was shown in answering the questions on transpiration, intensive culture and the planning of a cottage garden. Only one candidate entered for the Teachers' Honours Examination and was successful, *i.e.*, Mr. Geo. Edward Cox, 33, Newton, Trowbridge, Wiltshire.

MR. F. FULLER.

Mr. F. Fuller.—An old reader of *The Gardeners' Chronicle* and an occasional correspondent, Mr. Frederick Fuller, of Parnell, Auckland, New Zealand, has had a long and interesting gardening experience, and although he still engages in horticultural pursuits, he takes life easily now that the days of his years have passed the allotted span. Mr. Fuller regards himself as a link between the older generation of gardeners who knew and worked in many famous nurseries and gardens that are now no more, and the younger men who went to New Zealand and other colonies at the end of the past century. He commenced his horticultural education as garden boy at New Lodge, now called St. Leonards, at Horsham, before serving for two years with a florist and landscape gardener at Croydon. After four years with Messrs. Neal and Sons at Wandsworth Common, he obtained a position at Messrs. Rollisson's Nurseries, Tooting, being first employed in the outdoor department and then in the "hard-wooded" department. Here he attracted the attention of Mr. Buckley, who sent him to take charge of the glasshouses at Messrs. Knight's Nursery, Battle. For two years he stayed at Battle and then returned to Tooting and soon afterwards became foreman in the gardens of Mr. J. S. Walker at Hunsdon Bury. His next position was that of foreman at Alfreton Hall. On leaving Alfreton he started to walk to London and on his way called at Messrs. Pearson and Sons' Nursery at Chilwell, when Mr. Pearson urged him to call at Chatsworth. This he did, and Mr. Speed engaged him for the fruit department. Two years at Chatsworth were followed by a period in the gardens at Longford Hall, Stretford, but London was calling and so Mr. Fuller came to Messrs. E. G. Henderson's Nursery at Maida Vale, where Mr. James O'Brien engaged him, first, for the St. John's Wood branch and subsequently at Maida Vale. Eventually, Mr. O'Brien sent him to take charge of Dr. Ritchie's garden at The Grove, Belfast, but after three years he was back again at Maida Vale. A little later he went to Manchester where he managed a market-growing business, belonging to his wife's family, for four years, then once again he entered private service, becoming gardener to a retired tradesman in a Cheshire town. Here he remained until the death of his employer, when he took over the establishment and carried on a business of florist and landscape gardener for seventeen years. On the death of his wife and break-up of his family, he gave up the business and started for New Zealand, where he has remained for seventeen years and is regarded with great respect by the young horticulturists of the Auckland district and with great interest by the older men who have heard or read of the gardens and nurseries Mr. Fuller worked in in the Mother country. In the old days, Mr. Fuller was an active member of the Warrington Field Club and he holds further reminders of his youthful efforts to advance his position in the Practical Certificate of the Royal Horticultural Society, and certificates for botany, agriculture, tonic-sol-fa singing, and old notation. Although Mr. Fuller has passed his seventy-seventh birthday he is—to use his own words—"still studying."

Aberdonian's Important Appointment.—Much satisfaction has been given to his friends in Aberdeen and the North by the appointment of Mr. Edward Wyllie Fenton, M.A., B.Sc., as head of the Biology Department in the Edinburgh and East of Scotland College of Agriculture. He succeeds Dr. W. G. Smith, who has had charge of all the teaching in botany, agricultural zoology, and agricultural entomology, but who is now taking up under the special college work in agricultural botany. Born thirty-seven years ago, Mr. Fenton was educated at the Aberdeen Grammar School, whence he proceeded to Aberdeen University, where he graduated in Arts and Science, and was for a time assistant to the Professor of Botany. He served during the war in the Territorial Army with the R.F.A., and on demobilisation went to the Technical Institute, Swindon, as head of the Biological Department. Since 1920 Mr. Fenton has been head of the Biological and Botanical Departments of the Seale-Hayne Agricultural college, Newton Abbot, Devon, which caters for agricultural instruction in the counties of Devon and Cornwall. There he has been carrying on pioneer work in mycology, geology, and forestry He has likewise specialised in research work, particularly in grass pastures, and has issued several publications on grasses, weeds, etc. The appointment was made at a special meeting of the Governors of the College, held in the show-yard of the Highland and Agricultural Society at Edinburgh.

Biological Measurements.—The British Association Committee on Biological Measurements has drawn up in leaflet form a series of recommendations for those engaged in preparing for publication biological data of a numerical kind. It is believed that by following these recommendations (*a*) much space and expense of publication might often be saved, (*b*) a large amount of fruitless labour on the part of authors would be avoided, and (*c*) data obtainable from the literature would be far more readily comparable. These recommendations, however, can only take full effect, if their existence is automatically brought to the notice of contributors. Cases in which measurements or other numerical observations are too extensive to be printed in their entirety are of special importance, since they will be known in scientific literature only by a summary. The Committee has, accordingly, made arrangements with the British Museum (Natural History) at South Kensington and with the Royal Society of Edinburgh to establish archives for the reception of unpublished original measurements, which appear to be of permanent value. These archives will be available to students and will thus, in suitable cases, enable the original data upon which conclusions have been based to be put on record without being printed in full. Contributors of papers involving extensive numerical observations, are requested to consult the recommendations of the British Association Committee on Biological Measurements, 1927, obtainable from the British Association, Burlington House, W.1, price 6d. Arrangements have been made whereby original data, too extensive for complete publication, may be deposited at the British Museum (Natural History) or with the Royal Society of Edinburgh, and so be made available for future workers. Authors desirous of depositing data, whether zoological or botanical, in this manner should communicate with either the Keeper of Zoology, Natural History Museum, S.W. 7, or the General Secretary, the Royal Society of Edinburgh, 22, George Street, Edinburgh, enclosing full bibliographic reference to the publication in which the results are summarised. The Secretary of this special Committee of the British Association is Mr. R. A. Fisher, B.Sc., Rothamsted Experimental Station, Harpenden.

Primula Conference in 1928.—The Royal Horticultural Society is making plans for the resumption of the Conferences upon important garden matters which, before the war, did so much to bring together those who had special knowledge and to spread it over a wide field. The first of this new series will be held at Chelsea in May, 1928, and the subject will be "Primulas." Arrangements are being made to set aside a special tent at the Chelsea show for the exhibition of a representative series of both species and varieties of this great genus—which has of late years received so many valuable additions as the result of explorations in China, Tibet, and Upper Burma—and to hold a Conference between those interested, in another tent in the Chelsea Hospital Grounds on the second and third days of the Show. This early announcement is made in order that growers of Primulas of all kinds may prepare plants for exhibition at that time, and to invite the offer of papers upon the cultivation, characteristics, variations, native habitats, etc., of Primulas. The Director of the Royal Horticultural Society's Gardens, Wisley, Ripley, Surrey, will be glad to hear from intending exhibitors and to receive offers of papers to be read at the Conference.

Appointments for the Ensuing Week.—Sunday, August 7: Wakefield and North of England Tulip Society's meeting. Monday, August 8: Romsey Gardeners' Association's outing; United Horticultural Benefit and Provident Society's meeting; Guildford and District Gardeners' Association's meeting. Tuesday, August 9: Jersey Gardeners' Society's meeting. Wednesday, August 10: National Gladiolus Society's show in conjunction with Taunton Deane Horticultural Society's show (two days); Tighnabruaich Flower Show. Thursday, August 11: Oban Flower Show. Friday, August 12: Brechin Flower Show (two days); Royal Horticultural Society of Ireland meeting. Saturday, August 13: Cannock Horticultural Society's Show (two days) Port William Flower Show; Auchencrow (Berwickshire) Flower Show; Dumbartonshire Sweet Pea Society's Show; Dysart Flower Show.

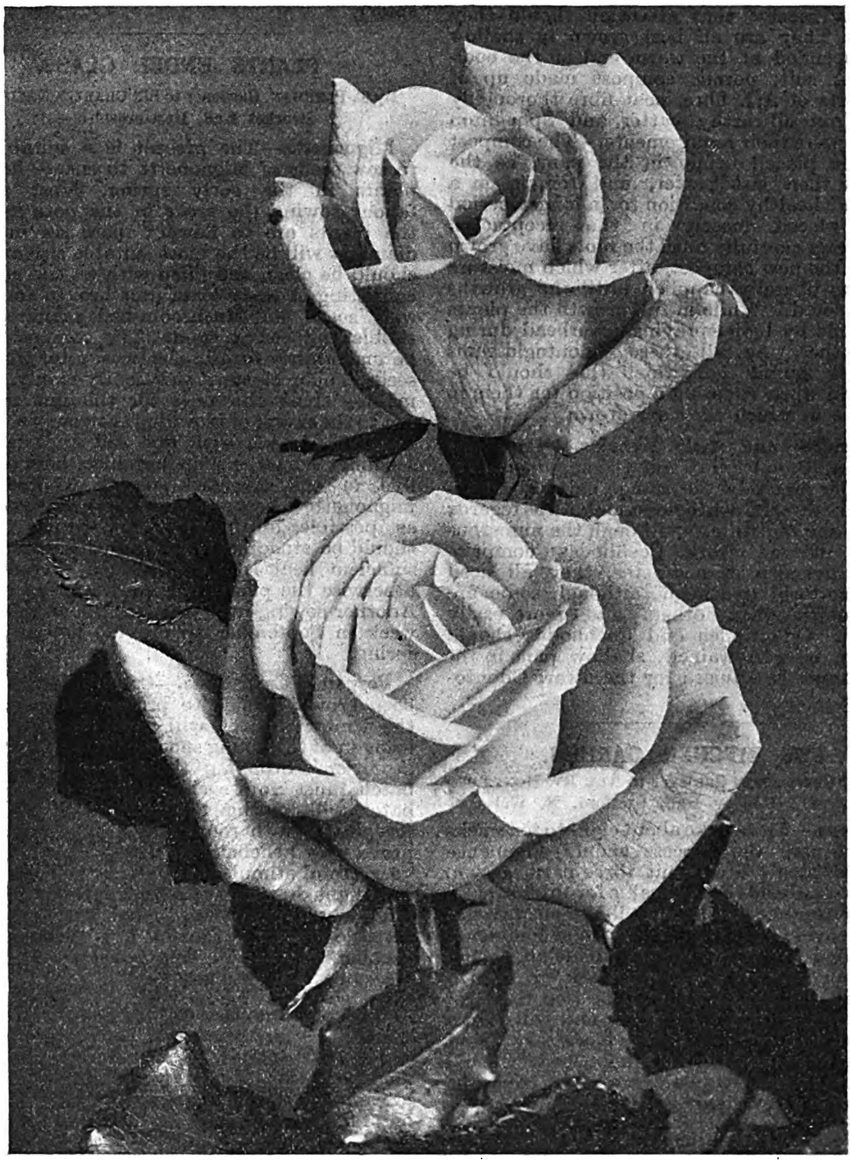

FIG. 43.—ROSE ELIZABETH OF YORK.
N.R.S. Certificate, July 1. Flowers orange-cerise and rose. Shown by Messrs. Dobbie and Co. (see p. 86).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Horticultural Society's Innovations.*—The intention which the Horticultural Society announces in another column is one which we have no doubt will meet with general satisfaction. It is proposed to offer monthly premiums for articles of cultivation which find no place in the great metropolitan exhibitions, and thus to encourage classes of productions which, if not brilliant, are at least as useful as the gorgeous specimens seen at Chiswick in May, June and July. That these garden exhibitions are too exclusive has been long felt; they are resplendent beyond description, and we trust will always continue so; but they are such as few but the wealthy can contend in. Above all things the produce of the kitchen garden is omitted on such occasions; and necessarily, for no harmony can be established between materials prepared for the kitchen and the exquisite decorations of the conservatory. To take vegetables to Chiswick would be like introducing saucepans and gridirons into a drawing-room. The proper place for exhibitions of vegetables is the Society's House in Regent Street, and thither they are now invited—in general collections in May, June and July; in particular kinds at other times. Every other meeting has its allotted variety; Green Peas in October, Celery in November, forced Vegetables in December, Salads in January, Lettuces in February, and so on. The exhibitions of May, June and July are limited to vegetables exclusively, shown in collections. In these months flowers and fruit are found elsewhere: and since foreign produce is declared admissible, though not in competition with English produce, it may be expected that the shows will possess great interest. Another new feature in the Regent Street meetings will be seen to consist in some particular class of flowers or fruit being also selected for competition on each occasion. Late annuals and Pears are invited in October; Chrysanthemums and alpine Strawberries in November; hardy, winter-flowering plants and Grapes in January; Hyacinths and preserved fruits, Cyclamens and Cherries in April. In this manner everything which the summer exhibitions cannot take will find a place by degrees, for it is understood that the subjects of exhibition will be changed more or less every year. Another advantage will be, that the eternal Orchids, stove and greenhouse plants, Pineapples and the like, which one is weary of seeing, being excluded from the meetings in Regent Street, will be the more interesting at Chiswick. Not that they are absolutely excluded; but as it is announced that no rewards will be given to any that do not possess very *extraordinary merit*, there can be no doubt that such things will generally be absent, and that what do appear will be really worth looking at. The difficulty which the Society has to encounter is want of space in its house in Regent Street; for it is possible that the good spirit of emulation may overwhelm it with contributions. To guard against that contingency it will be indispensable to narrow the admission of visitors who are not Fellows of the Society; and we understand that measures are under consideration which will effect that end with as little inconvenience as possible. *Gard. Chron., August* 7, 1852.

Publications Received.—*The Management of Greenhouses and Frames*, by Alfred E. Livingston. Crosby Lockwood and Son, Stationers' Hall Court, Ludgate Hill, E.C. Price 2s. 6d. net.—*Forestry: The Journal of the Society of Foresters of Great Britain.* Edited by H. M. Steven. Volume 1, No. 1. Price 7s. 6d.—*Plants of New Zealand*, by R. M. Laing and E. W. Blackwell. Price 18s. net. Both published by the Oxford University Press, Amen House, Warwick Square, E.C.4.

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon, Bletchley Park, Bletchley, Bucks.

Odontoglossums.—If any members of the dwarf-growing section of these cool-house Orchids—such as O. Cervantesii, O. Galeottianum, O. madrense, O. Rossii, and O. maculatum, with any of their hybrids, have not been repotted, they may receive that attention should they need it. They are all best grown in shallow pans suspended at the warm end of the cool-house. A soft, porous compost made up of equal parts of A.1. fibre, peat fibre thoroughly cleaned from all earthy matter, and Sphagnum moss, answers their requirements. The compost should be placed firmly in the pans, as the materials then last better, and remain in a sweet and healthy condition for a longer period than if placed loosely in the receptacles. Afford water carefully until the roots have grown freely in the new compost, after which moisture should be liberally supplied until the growths are completed. While in full growth the plants will benefit by light sprayings overhead during hot weather. As all these Odontoglossums delight in humid conditions this should be considered when choosing a position for them in the house in which they are grown.

Cochliodas and their Hybrids.—Cochlioda Noezliana, C. vulcanica and C. sanguinea, succeed under precisely the same cultural conditions as the dwarf Odontoglossums both as regards compost and moisture. Although the numerous hybrids derived from Cochliodas comprise such a diversity of character, they all need similar cultural treatment, although some are more robust than others and more easily managed. Odontiodas and Cochliodas should be grown in well-drained, shallow pans in the same manner as advised for the dwarf Odontoglossums.

THE KITCHEN GARDEN.

By E. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Cardoons.—These take about eight to ten weeks to blanch and the process should commence when the plants are about three-parts grown. Brown paper bands are desirable for this purpose, as they ensure good, clean, well-blanched stems. Tie the leaves together at the top, and commence by winding a piece of paper, about six inches wide, round the base; then bank up with a little soil. Each plant should be tied to a stiff cane and, as it grows, more paper and soil should be added, this generally being necessary about every ten days until the work is finished. Should frost come before the plants are lifted, cover the foliage with a good layer of clean straw.

Brassicas.—These should be examined, and any that do not appear to be growing well pulled up, and their places filled by fresh plants from the reserve bed. Continue to plant out very late Savoys, Cabbages, Coleworts, and even Kales and Broccoli, should vacant ground be available—as most of these will prove valuable when the demand is great. Look out for caterpillars, and pick them off by hand should the attack be slight; for bad attacks I recommend spraying with Katakilla, as this remedy is non-poisonous, yet most efficacious. This material may also be applied to Cauliflowers, when caterpillars are troublesome. All plants that are sufficiently advanced should have a little soil drawn up to their stems, as this keeps them rigid, especially when growing in exposed positions. For tall-growing varieties of Brussels Sprouts I recommend the support of a strong stake and tie, otherwise many will be blown over if a strong gale occurs. Work the Dutch hoe between the rows so long as weather permits.

Turnips.—A good bed of this useful crop should be sown now, for use during the winter. Varieties most suitable for this sowing are Green-top White, Chirk Castle Black Stone and All-the-Year-Round. Seeds should be sown thinly in rows fifteen to eighteen inches apart. So soon as the young plants show through the ground, dust them with old soot; thin them early and keep the ground well hoed. If birds are troublesome, use black cotton, drawn tightly over the plot, to scare them away.

Aubergines.—These will now be cropping freely, and the plants should be fed liberally with liquid manure made from the drainings of cow-sheds and stables and diluted with water, according to the strength of the liquid. Syringe the plants well after hot days, or the foliage will soon fall a prey to thrips and red spider.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Mignonette.—The present is a suitable time to sow seeds of Mignonette to ensure flowering plants in the early spring. Most growers favour sowing the seeds in the pots in which the plants are to flower; pots six inches in diameter will be the most suitable size and they should be clean and filled with a good compost consisting of turfy loam (not broken too small) with some old Mushroom-bed manure, lime-rubble and coarse sand. The compost should be made fairly firm in the pots, after which the seeds should be sown sufficiently thinly, always making some allowance for thinning out, but not to the extent of crowding the young seedlings. Cover the seeds with fine soil and when the seedlings are large enough reduce them to about five of the strongest plants to each pot. Mignonette is best grown under as cool conditions as possible and during the winter months should be stood near the roof glass where only sufficient heat is maintained to exclude frost, otherwise the plants become weak and spindly. Another sowing may be made about the second week in September to provide flowers in late spring.

Perpetual Carnations.—Carnations that have been grown outside to produce flowers during the winter months will need supports as the tying in of the young shoots will call for frequent attention. Stopping the shoots on the later batch must now cease. Plants of the earlier batch will by this time have well filled their receptacles with roots and a light feeding will prove very beneficial to them. Soot water is a very useful stimulant for Carnations, alternated with light dressings of some approved Carnation manure. Syringe the plants with weak soot water occasionally during hot weather, in the evening, as this will help considerably to keep insect pests in check.

General Remarks.—At this season of the year constant attention must be given to plants grown to produce flowers during the winter months. Attacks of insect pests must be prevented. Mildew is sometimes troublesome on Chrysanthemums and if allowed to go unchallenged will do much damage. Earwigs are also troublesome in some seasons, but these may be trapped in dry Broad Bean stalks placed amongst the branches; any insects that shelter in these should be blown out each morning into a jar containing paraffin. It must be remembered that these pests find a pleasant hiding place in the tops of canes that are used for the support of Chrysanthemums, etc.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Raspberries.—Although the crop is satisfactory this season the individual fruits of Raspberries lack both sweetness and firmness, owing to the absence of sunshine and the abundance of moisture. The canes are growing freely and at the present time have every appearance of making strong growths by the end of the season. So soon as the old canes have ceased fruiting, the nets which have been employed for protection against birds should be removed, dried carefully, folded, labelled as to size and age, and if not required for use again this season, they should be put away in a dry, airy shed where they will remain undamaged. After removing the nets cut out all canes that have borne fruits, but carry out the work carefully so as not to damage the leaves of the young growth left for fruiting. The prompt removal of the old canes after the fruits have been gathered will give the young ones a much better chance to develop, while the additional light and air admitted will greatly aid the ripening of the canes. After removing the old canes take out any of the young ones not required and secure those retained to the wires or other supports to prevent damage by strong winds. Clear the land of all weeds and rubbish and loosen the surface soil between the rows. If the young canes are not growing strongly give the roots a good dressing of Clay's or other suitable fertilizer.

Budding Fruit Trees.—Any budding to be done may be carried out during the next few weeks, although in private gardens it is not practised much except for restoring the symmetry of a tree. Peaches, Cherries, Plums and other fruits may be budded readily at this season if the bark separates freely from the stock. When stocks are prepared and grown specially for budding, insert the buds at a suitable height from the ground level. For Peaches I prefer a clear stem of two feet.

The Fruit Room.—As the early varieties of both Apples and Pears are approaching the ripening period, the cleansing of the fruit room must not be overlooked. Wash the walls and ceiling with fresh lime and thoroughly scrub all wood work. All ventilation possible should be given to thoroughly dry up the moisture.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Cucumbers.—The end of July is a suitable time to raise Cucumbers for furnishing supplies up to Christmas. Light and efficiently-heated pits are essential after September; fire heat is not needed up to that date as fermenting materials will afford sufficient warmth. Remove the old plants before red-spider becomes troublesome and sow seeds in a moderate temperature to ensure plants with short-jointed growth. Give the seedlings plenty of pot room until the pits are ready for them; the latter will in all probability be occupied by Melons and will need cleansing thoroughly before recropping with the Cucumbers. Place fermenting materials over the water pipes, which may be heated, if necessary, later, and arrange a ridge or mound of rough compost over the hot-bed. The soil should consist of old, rotted turf, lime rubble and burnt refuse, with a dash of bone meal and soot. The depth of soil need not be more than nine inches to start with. The plants will grow very fast through August and September. Extension training is the simplest and most profitable system, provided the plants are allowed plenty of room. As the plants grow and the roots rise to the surface, more rough, turfy compost should be added, little and often, but no stimulants should be given the roots until the plants are in full bearing. Tepid water should be given the roots as required and weak soot water used freely for syringing, especially when sun heat favours closing the pit early with a temperature rising to 90°. Old plants in pits and frames will now begin to show signs of failing, no matter how well they may have been fed and syringed. If it is desired to retain these old plants their vigour may be improved by carefully cutting them over, top-dressing the roots with fresh turfy soil and bone dust, feeding them with tepid liquid manure and syringing them copiously.

Figs.—Thoroughly cleanse the early Fig trees from which the second crop of fruit has been gathered and well water the roots as red-spider is difficult to keep in check when the roots are kept in a semi-dry condition. If the trees are fairly clean syringing them well every evening should thoroughly destroy ordinary pests, but if mealy bug is present an insecticide should be used. Water at a temperature of 120° soon destroys brown scale without injuring the foliage. It is rather early to prune forced trees, but not too early to thin all weak growths, as barren shoots may be shading others that are more promising. Remove the most forward fruits hanging after the second crop is over, as these will delay the ripening and resting of the trees which should be ready for a fresh start in November. Successional trees in full bearing require an abundance of air and liberal syringing on bright, warm days, but fire heat having been discontinued, a cold damp atmosphere at night must be guarded against, as this will cause the fruits to develop spot. Careful bottom ventilation will do much to obviate this, but an excess of moisture must always be guarded against in dull weather. If the trees are planted out in inside borders and the shoots allowed to extend they may be converted into perpetual bearers by judiciously thinning the growths and feeding liberally.

Planting Vines.—Those in eight-inch pots must still be encouraged by frequent syringings and judicious waterings.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Hardy Chrysanthemums.—Outdoor varieties grown in the reserve garden for the purpose of replacing early-flowering subjects, should now be removed to their flowering quarters. They should receive a good watering the day previous to being moved so that if planted carefully and firmly and well watered in they will take no harm. So treated they may be safely moved even when just coming into flower. Some of the taller-growing varieties will require staking, but for bedding purposes, sturdy self-supporting varieties should be favoured. Varieties for the supply of cut flowers should be grown in the nursery garden, and for this purpose length of stem is important; thus, some of the taller growing sorts will be found most suitable, and in some cases slight disbudding may be necessary.

China Asters.—These are very useful for growing in the nursery garden for replacing early-flowering subjects, as they also transplant readily and are equally useful for furnishing cut flowers.

Cistuses and Helianthemums.—Both these subjects are valuable for planting on poor, sun-baked slopes, and they may be propagated readily at this season by means of cuttings of the partially ripened wood, inserting the cuttings in pots of sandy soil, and standing them in a cold frame or in a case in a cool house. Where large quantities are required the cuttings may be dibbled directly into a bed of sandy soil in a cold frame. As very few species of Cistus are absolutely hardy it is essential, or at least a wise precaution, to propagate a few plants each year.

Choice Shrubs.—Many choice shrubs may be propagated easily now by means of cuttings made from the partially-ripened current year's wood, the twiggy, lateral growths being most suitable for this purpose. The cuttings should be about four inches in length, and in most cases they are best removed with a heel of old wood attached. According to the quantity required, the cuttings may be inserted in pots of sandy soil, and stood in a case in a cold house or frame, or they may be inserted in beds of prepared soil in cold frames, or under bell glasses on a shady border. Plants that prove difficult of increase by means of cuttings should be layered.

Stocks.—The Brompton and Intermediate East Lothian Stocks are general favourites, and seeds of both should now be sown either outdoors, or in boxes in a cold frame. When fit to handle prick out the seedlings on a piece of firm and rather poor soil; this ensures firm, sturdy growth which is essential for passing successfully through the winter. These Stocks should be transferred to their flowering quarters in time for them to become well established before winter sets in. Well drained and warm soil is important. Where the soil is cold and wet, it will be necessary to pot the plants and winter them in cold frames or unheated pits; they should be grown as cool as possible, and will require careful watering during the winter months.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Chrysanthemums.—The earliest of these are now showing flower, and to keep them erect, the side-shoots must be either looped to the central stake, or three stakes set in a triangle round each plant and surrounded by green twine, which is almost invisible; this care may not be necessary, however, in sheltered gardens, but where wind is likely to do much damage the precaution is well worth while, as nothing is more disheartening to the grower than to find his plants damaged by a storm just as they are coming into flower, and the side-shoots, which should carry on the flowering period well into autumn, ruthlessly snapped off at their bases. Later varieties, whether planted out with the intention of lifting them later, or grown in pots, should also be well supported, kept upright during all the growing period, and well supplied with water during dry weather. Disbudding for larger flowers may be practised on these earlier varieties, but for garden decoration as well as for use as cut flowers naturally-grown sprays are most effective.

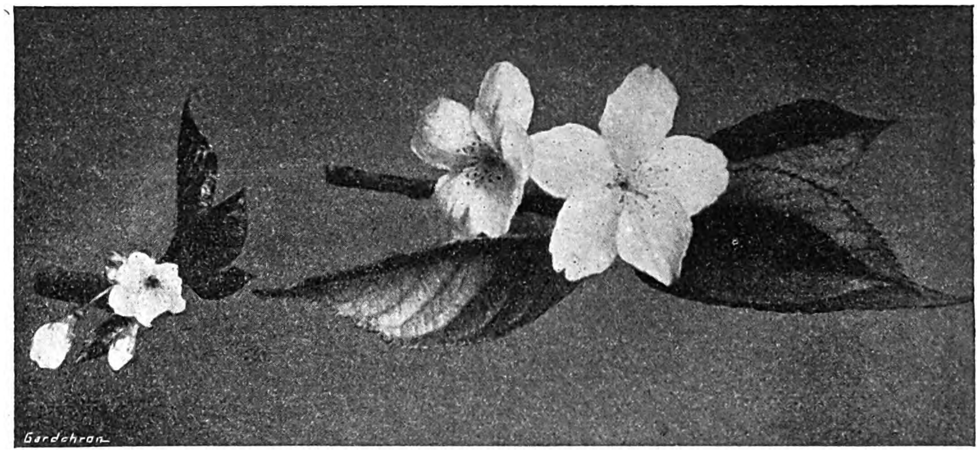

FIG. 44.—PRUNUS TAI HAKU SAKURA, WITH FLOWERS OF CHERRY BIGARREAU NAPOLEON (LEFT) FOR COMPARISON.

(see p. 107).

Biennials.—As more ground becomes available by the clearing of early crops, it should be prepared for the nursery beds of Wallflowers, Campanulas, Sweet Williams, etc., which were raised from seeds sown during May and June. Many perennials, also raised in this way, are ready to be transplanted, and the difference between plants which receive this attention at the proper time, and those which are left crowded and starved in the seed beds is most marked. If the amount of ground is limited the various plants should be given a minimum of six inches between them each way; later, every alternate row may be again transplanted, as well as alternate plants in the remaining rows, so that the beds will then be occupied with good plants standing twelve inches apart. After an early Potato crop the soil is usually in good condition for growing many plants of this kind, but should it be poor a light dressing of manure may be dug in. If dry weather follows transplanting, the seedlings should be watered occasionally until it becomes evident that they have recovered from the check.

Small Fruits.—The picking of what are usually termed small fruits, which include Black, Red and White Currants, Raspberries, Gooseberries, Loganberries, etc., is now occupying much time, during dry weather, and every effort should be made to harvest these crops in the best possible condition. If required for home consumption in the making of preserves, they may be picked when quite ripe, but if they are to be dispatched a considerable distance either by road or rail, they should be gathered before they are fully ripe, as in this condition fruits travel so much better, and actually ripen on the journey, arriving at their destination fresh and appetising. In large plantations a close watch should be kept for any appearance of reversion among Black Currants, and if any symptoms are observed, the bushes should be removed. These symptoms are unmistakable and consist of an entire loss of crop in bad cases, the fruits dropping off at an early stage leaving nothing but the "strings" on which they hung, while the bushes present an extremely vigorous appearance, bursting into second growth, although the foliage is much smaller than that of the normally healthy plants. This is the most deceptive feature of the disease, because when the foliage has fallen during late autumn, these apparently vigorous plants will be selected nine times out of ten for the supply of cuttings, and the results are disastrous.

Indoor Fruits.—As the early crops of Peaches, Nectarines and Apricots are gathered, they should be laid on a well-padded shelf in a cool fruit room for a few hours before being used for dessert or packed. Much care is required in the handling of these soft fruits and packing them to travel safely over long distances is almost a work of art. So soon as the trees are cleared they should be well-watered and syringed to cleanse them from insect pests, which invariably choose the ripening period, when the trees have been kept on the dry side, to make their attacks. When the borders have been well soaked once more the trees may be given the benefit of occasional waterings with liquid manure, or a light dressing of artificial manure well watered in, as this is of great assistance in helping to plump up the fruit buds for next season. At the same time all old fruiting wood not required should be removed, thus allowing light and air to reach and thoroughly ripen next season's fruiting wood. Later varieties approaching the ripening stage, must be kept somewhat on the dry side, and allowed abundance of air on all occasions, both night and day.

STREET TREES OF ATHENS.

One of the chief beauties of the larger cities on the continent, and second only to their edifices and monuments, are the trees. Spending the greater part of their leisure time in the open air it is natural that the people of southern countries look upon the streets and the adornment of the same much as an Englishman does upon the decoration of his house. Most notably on the broad, principal streets do trees become a beautiful feature, in fact, taking all the streets together, they and the gardens are probably the town's chief glory and ought to be treasured, protected and nourished accordingly.

Such is the dryness of this climate that the trees of Athens are not of a first-rate order. Shade is the beneficial factor in this hot climate, but evergreens are chiefly selected, as the winters are mild. Plantanus orientalis gives the much desired shade and grows well. Phoenix canariensis is a characteristic Palm of Athens and is often planted to alternate with the Plane; a most effective arrangement, especially for winter-time. Phoenix dactylifera, the Date Palm, and several others grow freely without protection, notably the Chamaerops. Pritchardias do wonderfully well.

The broad-leaved Mulberries, Morus alba, M. nigra and M. rubra make useful and ornamental trees, giving ample shade, but a little objectionable in public thoroughfares when fruiting owing to the stains of the fruit when crushed underfoot. The leaves of M. alba are used for the silkworm to feed upon. M. nigra is the fruiting Mulberry, and M. rubra is a tall-growing kind which produces useful timber. Weeping Mulberries are obtained by grafting and thrive on any soil, even that which is poor and gravelly.

The Linden is not employed extensively. The prejudice against this tree has arisen wholly, I think, from the fact that its wood is neither good for timber nor for fuel. As to form, shape and beauty, and as a shade-giver, it comes well to the front, while we have no other tree that flowers so freely. As a tree for bees it stands pre-eminent and for this quality alone it deserves to be planted. Honey may be every man's luxury. It is a wholesome tree, giving abundance of fragrance in June. Broussonetia papyrifera, the Paper Mulberry, is a desirable shade tree and ornamental with its large velvety leaves, but not sufficiently utilised. Quercus glauca, an Eastern evergreen Oak, grows slowly but surely. Robinia Pseudacacia and its variety, Bessoniana, also Sophora tetraptera, are planted extensively, but are peculiarly bad for this purpose. The Sophora is of a loose, spreading habit, brittle and certainly cannot merit the prominence it obtains.

Apart from those trees used extensively, one finds here and there the Elm, Casuarina, Enkianthus, Ceratonia, Eriobotrya and Gleditschia, the last a tree with enormous and dangerous thorns; none, however, apart from the Elm, possess qualities to warrant their use as street trees. It will be observed that many of these trees are evergreen, and hence the streets bear the same fresh and green aspect in winter as in summer and even more so.

The most noticeable tree in Athens is the Pepper tree, Schinus Molle, which flourishes luxuriantly; indeed, this is the only decorative tree of any value in Athens. It attains good dimensions, is full of life and vigour during the long summer drought, and is remarkable for the delicacy and elegance of its compound leaves and large bunches of coral-like berries. When unripe the berries are green, and it is no unusual circumstance to see the blossom, which is comparatively small and insignificant, and both green and ripe red berries together on the same tree; the berries are pungent and have very much the taste of ordinary Pepper. This particular tree is used most effectively in one street, making an interminable vista stretching as far as the eye can see, the bending branches almost touching one another in an endless arch of verdure, and forming not only a delightful perspective for the eye, but adding beauty, grace and symmetry to whatever may be harsh or forbidding. In this street alone in Athens art has been employed to assist Nature's handiwork. Particular attention appears to have been paid to any dead or dying tree by replanting with one of the same species. Therefore the line of perspective is unbroken, nor is the eye repelled by the absence of a single trunk.

The planting as well as the maintenance of trees in continental cities should be an item of no small importance to the municipalities and the preservation of trees ought not to be of less moment than the repairing of the roads or the lighting of the streets. Unfortunately the people of Athens seem to care but little for these features and what beauty the trees possess is due rather to Nature than to art. Dead and dying trees are seen almost everywhere, no established system of pruning or irrigation is evident and no safeguard is provided for newly-planted trees against animals, etc. It is no uncommon sight to observe children, and sometimes adults, ruthlessly mutilating public trees. There are two principal ways of preventing this vandalism: legal protection on the one hand and on the other the inaugurating of such methods as will make for an enhancement of the tastes of the people, to the end that a love for the beautiful in general may be engendered.

Athens, particularly rich in ancient art, is poor in appreciation of natural beauty. *L. W. Young, Athens.*

TREES AND SHRUBS.

BERBERIDOPSIS CORALLINA.

This remarkable Valdivian twining shrub was introduced to Great Britain by Richard Pearce about sixty-five years ago. On a north wall it has succeeded very well with me for many years, climbing to about ten to twelve feet and blossoming freely from late July onwards for at least two months. The flowers have a superficial resemblance to those of a Fuchsia in colour and they are suspended on two-inch stalks of the same tint. But on closer inspection that resemblance vanishes for the blooms of B. corallina are produced in racemes, they are almost globular, half-an-inch across and composed of a dozen or more fleshy segments, all of them being more or less concave and all being of the same rich colour.

Though B. corallina does not appear to bear any relationship to other genera there is a suggestion of the Berberis in the horny, dark-green, glossy leaves, with their sharp little marginal spines and glaucous undersides. It is evergreen, and though considered no more than half-hardy, it is able to withstand fifteen to twenty degrees of frost without much injury. A cool root-run in sandy peat, or, preferably, a free vegetable loam enriched with leaf-mould seems to suit it. Here it did no good on a hot sunny wall where it was first planted, but ever since it has been on the north side it has been an unqualified success. *A. T. J., N. Wales.*

SUMMER COLOUR IN THE SHRUBBERY.

In the formation of shrubberies there is often a tendency to plant too freely those subjects which produce masses of flower in the spring months. Many of our shrubs flower at this season and planters are inclined to confine their choice to those which blossom in April and May with the consequence that the shrubbery is lacking in colour and is far less interesting in the later summer months.

Where wide areas are devoted to shrubberies it is easy to introduce plants with coloured foliage for continuous colour effect during the summer months, such as groups of Acer palmatum purpureum, Prunus Pissardii, Elaeagnus pungens aureus, Corylus maxima atropurpurea, Ribes pumilum aureum, Golden Elder or even Cupressus Allumi and C. macrocarpa lutea, all of which contrast with the foliage of the occupants of the average shrubbery and help to create an attractive effect.

The choice of flowering subjects, however, need not be confined to those which blossom in the spring for there is a goodly selection of late-flowering shrubs available. Amongst these the Buddleias are strikingly beautiful, B. variabilis and its varieties Veitchiana and magnifica being particularly useful. B. alternifolia, though somewhat earlier, is a very distinct and charming species. Hydrangea paniculata and its variety grandiflora are exceedingly valuable as late flowering shrubs, the massive pyramidal flower spikes being very effective. In the southern counties and on the seaboard the various forms of H. hortensis prove hardy but these can hardly be recommended for general use.

Amongst the numerous Brooms, Genista virgata, G. aetnensis and Spartium junceum are valuable late flowering species, the latter maintaining its display of bright yellow flowers throughout the greater part of the summer. Spiraea canescens flowers late and is a charming shrub, while S. Douglasii also flowers freely until late in the season. Caryopteris Mastacanthus is a small shrub producing freely its light blue spikes of flowers in late summer and is effective in the front of the shrubbery, while Ceratostigma Willmottiana is also a promising blue-flowered shrub extending its display over a long season.

Clethra alnifolia and C. tomentosa thrive on light soils and flower in the late summer when flowering shrubs are not plentiful. The hardy Fuchsias make excellent subjects for late summer displays and although it is only in the southern counties or on the sea-coast that they become truly shrubby they grow freely from the base and seldom fail to flower in all but the coldest localities. In those favoured districts near the coast where the shrubby Veronicas prove hardy this genus offers several useful kinds which maintain a colour display during the whole of the late summer and autumn months. *A. P. C.*

FLOWER GARDEN.

SCHIZOPETALON WALKERI.

In the daytime most of the dainty, white flowers of this plant are closed, and it seems remarkable that such quaintly-petalled flowers should hide their special characteristic when other plants are beautifully gay. The blooms emit—even in the morning—a delicious perfume. Possibly this hardy annual has suffered in popularity owing to the closing of its flowers in the daytime. Even if a stem is cut in the afternoon, with a flower opened at the moment, the flowers will soon close up. The petals of an oldish bloom do not close neatly nor yet so quickly as those of a fresh flower. One has the impression when viewing the closed flowers that they are over, as the turned-in petals exhibit a straw-green colour which adds considerably to the faded-looking appearance. An individual flower continues opening and closing for about a week.

Each plant carries, on an average, six to eight open flowers at one time, and so many as thirty blooms are borne by one strong stem; yet rarely more than half-a-dozen open simultaneously, while a cluster of green buds at the apex in various stages of development keeps up the succession of flowers.

Many of the seed pods (including their pedicels) are of the same length as the cauline leaves, from the axils of which they have arisen—at least, those situated fairly well down the stem. Nearer the top, the cauline leaves are very much smaller, and usually quite plain. The basal leaves, half-a-dozen or so on each plant, are pinnatifid and vary in length from two to four inches and a good-sized leaf measures an inch across at the broadest part. Plants range in height from twelve to twenty-one inches, while so many as six flowering stems are produced by a single plant. This hardy annual is easily grown and flowering plants may be obtained in little over two months from seeds sown in the open. *D. A., Midlothian.*

HARDY FLOWER BORDER.

HELLEBORES.

Helleborus niger, the Christmas Rose, should be planted during August or early September. The plants thrive in a soil rich in humus, therefore decayed vegetable matter should be added to heavy soils, and leaf-mould worked in between the roots. Stagnant soil is a frequent cause of failure. In the southern counties this Hellebores generally grows well in a partial shade, but the best plants I have seen were growing on a north border in an old garden, when the soil was light, and had been under thorough cultivation for many years. The plants were cleaned over after flowering and an annual mulch of manure from an old hot-bed afforded.

To secure clean flowers protection is necessary, and frames, or hand-lights may be used for this purpose. Some protection may be needed at the time the plants are developing their leaves, during windy weather, and they should not be allowed to suffer from drought. Thoroughly established plants flower more freely than those which are frequently disturbed. If a succession of flowers is required several varieties should be planted. Helleborus niger altifolius (syn. maximus) has very large flowers on long stalks, white, tinted rose on the outside of the petals, but frequently the flowers are pure white when grown under glass.

Helleborus orientalis (Lenten Rose) should be planted during the autumn and is a most useful subject for shady positions, flowering when few other flowers are open outdoors, during February and March. There are many named varieties and their flowers range in colour from white and pink, to plum and crimson, while some are almost black. They are all useful for cutting, but the stalks should be split before being placed in water.

Mixed hybrids are excellent for naturalising in shady places in the wild garden and in woods. *C. Ruse.*

COMMELINA COELESTIS.

Allied to the Tradescantias, the Commelinas commemorate the two Dutch botanists, Kaspar (1667-1731) and Johann (1629-1698) Commelin. C. coelestis is chiefly noteworthy for the pure blue colouring of its flowers, and it is one of the most delightful of all blue-flowered plants. It is a herbaceous and perennial, enjoying a sunny position and a well-drained, rich, loamy soil. In a sheltered position, the plants may become permanent, but in cold situations they should be lifted, and the fleshy tuberous roots stored in the same way as those of Dahlias, great care being exercised, however, to prevent their becoming very dry.

The blue flowers of C. coelestis are freely produced; the peduncles are pubescent, the spathes cordate and acuminate, folded together; the leaves are lanceolate and the sheath ciliated. When flowering during June, the plant attains to a height of about eighteen inches. C. coelestis may be raised from seeds; it was introduced in 1813. *Ralph E. Arnold.*

IRIS GARDEN.

IRIS FLORENTINA.

The Florentine Iris is a noble species from Central and Southern Europe. It is early-flowering, being at its best during the month of May, the flowering period synchronising with that of the tall, bearded Irises. The colour of the type may be best described as a delicate grey-white or pale lavender shade; a variety known as albicans is pure white, and another variety, Madonna, is blue, flushed with purple. The flowers are large and produced very profusely.

As a garden plant it is useful in many ways—in the flower border, in association with dark-leaved shrubs; but nowhere is it seen to better advantage than when planted in a fairly loose bed, by itself, for only in such a situation is the full beauty and nobility of Iris florentina seen. *T. H. Everett.*

PLANTS NEW OR NOTEWORTHY.

A NEW JAPANESE FLOWERING-CHERRY: TAI HAKU SAKURA.

In my opinion, Tai Haku Sakura is the most beautiful of all the white Japanese Cherries. Its chief charm lies in the striking contrast between the snowy whiteness of its immense flowers and the rich coppery-red of the young foliage. In this respect I believe it to be unique among the large-blossomed, pure white varieties, all the others having the immature leaves of some distinctly greenish hue indicating thereby affinity to the Oshima Cherry (Prunus speciosa).

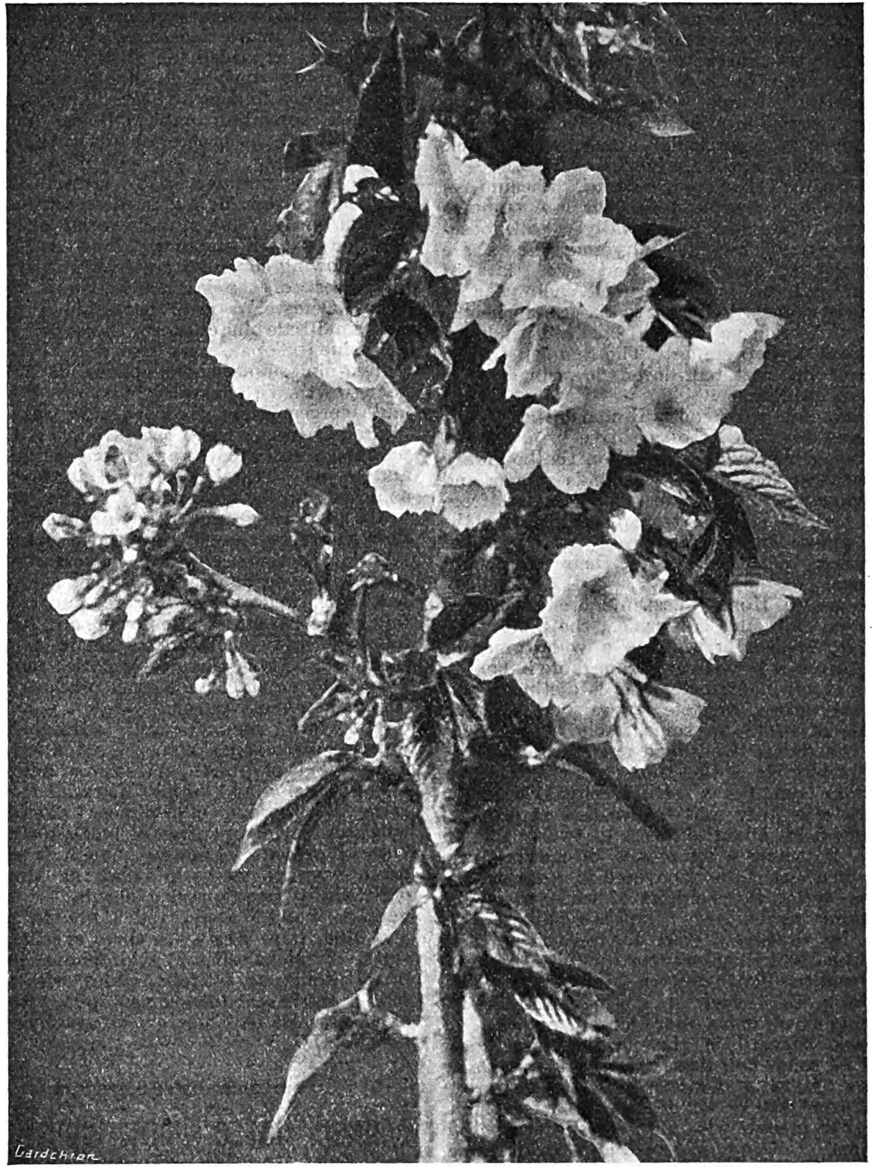

FIG. 45.—PRUNUS TAI HAKU SAKURA.

P. mutabilis var. (?); showing a cluster of flowers of Cherry Bigarreau Napoleon (left), for comparison.

The combination of white flowers and reddish foliage is commonly encountered in the wild Hill Cherry (Prunus mutabilis), and it is possible that this species is the parent of Tai Haku Sakura. The flowers of this garden variety are of remarkable size, measuring, when fully open, nearly 6 cm. (about 2¼ inches) in diameter. They are borne in clusters of two or three (Figs. 44, 45), and are of good shape, with a relatively small, thin cupola and rather long, narrow sepals.

To-day this Cherry appears to be only known to Japanese experts by an old kakemono (hanging picture) in the possession of Mr. Funadsu,* and there is every reason to suppose that it is now extinct in the country of its origin.

The fact that such a splendid variety should have been allowed to die out is an indication of the apathy shown by the present day Japanese horticulturists towards their native plants. Tai Haku Sakura appears to be a strong grower and to possess an excellent constitution, so there can be no excuse for its disappearance on the score of delicacy.

The single tree from which my original scions were cut formed part of a collection of Cherries imported from Japan about twenty-seven years ago. As its owner was entirely unaware of its rarity, it was very fortunate that I chanced to pay a casual call at a time when it was in flower. Several small specimens are now in my collection. In return for the beauty my garden owes to Japan, I feel under an obligation to restore Tai Haku Sakura to its native country. With this object in view, I sent a number of grafts last winter to the Secretary of the Japanese Cherry Society. Unfortunately, these all failed, but I hope to be more successful this winter.

This variety was named by me Tai Haku Sakura (meaning the "Great White Cherry") at the suggestion of Prince Taka Tsukasa, President of the Japanese Cherry Society.

Some idea of the size of the blossom may be obtained by studying the accompanying illustrations (Figs. 44 and 45). Flowers of an English fruiting Cherry are shown for comparison. *Collingwood Ingram.*

[Mr. Ingram asks us to state that no scions of this Cherry are available for distribution.—Eds.]

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* For further particulars of Mr. Funadsu's picture, see *The Gardeners' Chronicle*, Nov. 20, 1926, p. 409.

NOTES FROM KEW.

No better example of the old proverb that "it's an ill wind that blows nobody any good," could be wished for than the condition of the trees, shrubs and lawns at Kew. The abundant rains of the past five or six weeks have helped the new growth of the trees and shrubs very considerably, and this augurs well for next season's flowers. Rhododendrons in particular have made abundant growth, while on the sandy soil of Kew it is unusual to see the lawns so fresh and green in late July.

In several large lawn beds and numerous groups in shrubbery borders, large bushes of the Mount Etna Broom, Genista aetnensis are masses of rich golden yellow blossoms. Flowering during July and early August, when the number of hardy shrubs in flower is not excessive, it is particularly valuable. Growing from twelve feet to twenty feet in height, its tall, loose habit gives it a particular value for the back half of a wide, shrubbery border.

The Spanish Broom, Spartium junceum, is another very valuable shrub for late summer flowering. This also is, naturally, a tall, loose-habited shrub, but if the young shoots are freely topped during the first two years of growth, and the bushes pruned each year in March, specimens four feet to six feet in height result. The rich yellow blossoms are produced from June to September. The Spanish Broom is one of the best half-dozen flowering shrubs for town gardens.

In common with most Brooms, the Mount Etna and Spanish Brooms thrive in dry, light soils, being particularly useful on the boundary line between the pleasure grounds proper and the woodland. Both are easily raised from seeds, and, as neither transplant readily, the young plants should be grown in pots for about two years, until ready for their permanent positions.

Two useful Horse Chestnuts are at present in flower. Aesculus californica, the Californian Buckeye, is usually seen as a wide-spreading tree fifteen feet to twenty feet, or more in height, and as much in diameter. It is distinct in its rich, dark-green, digitate leaves, and compact panicles of white blossoms, freely produced in July. Seeds provide a ready means of increase. The Shrubby Horse-Chestnut or Pavia, Aesculus parviflora (syn. Pavia macrostachya), is a very distinct late July and August-flowering shrub. Growing from about six feet to twelve feet in height, it increases by means of suckers into wide-spreading clumps, covered in August with slender, cylindrical panicles of white blossoms. It seldoms ripens seeds; but is readily propagated by division. Said to have been first introduced to British gardens by John Fraser in 1785 from the South-eastern United States, it is surprising that such a distinct and useful flowering shrub is not more largely grown.

Olearia Haastii is the hardiest and most useful of some half-dozen New Zealand Daisy Bushes. It is a compact-growing, evergreen shrub from five or six feet to nine feet high, covered at present with numberless starry-white blossoms. Cuttings inserted in a cold frame, or on a border outside in sandy soil during October, provide ready means of increase. Olearia Haastii is a very useful shrub for town gardens.

Two Azaleas of more than passing interest are Rhododendron occidentale and R. viscosum, both being valuable July-flowering, deciduous shrubs for partially-shaded and preferably dampish soils. The Swamp Honeysuckle, R. viscosum with its white or pink-tinted blossoms is fairly well-known and is readily raised from seeds. The type of R. occidentale has been rather overshadowed by the larger-flowered hybrids raised by the late Mr. Anthony Waterer of Knap Hill, but the species has the great merit of flowering a month later.

Cotoneaster turbinata is one of the most distinct members of its genus and being a fast-growing, evergreen bush it is valuable alike as a lawn specimen and in the shrubbery. Upright in habit it has possibilities as a shrub for hedges up to eight feet, or more, in height. Corymbs of small white flowers cover the bushes at the present time.

The double-flowered Brambles, Rubus ulmifolius var. bellidiflorus, pink; and R. thyrsoideus var. flore pleno, white, are deserving of attention for shrubbery borders and semi-wild conditions. Thriving in most soils and in semi-shade, their cultivation is worth considering in public parks as a utility shrub to form an impenetrable hedge or screen, which is also attractive during July and early August. Layering and cuttings inserted in a cold frame during September, are the methods of propagation.

The Plagianthuses or Hoherias have been some of the most attractive and interesting flowering shrubs in the Berberis Dell during July. Nine feet to ten feet in height, and more in diameter, the large bushes were wreathed with the almost transparent white blossoms. There are two forms now regarded as distinct species, P. Lyallii more upright in habit, with greyish-green downy foliage, and P. glabrata, a shrub of more spreading habit. Being natives of New Zealand, the protection of a wall is desirable in cold localities.

The late summer and autumn-flowering Ceanothuses provide our gardens with a wealth of blue and several pink-flowering shrubs. In addition to the popular Gloire de Versailles the following sorts are cultivated in beds on a lawn west of the large Temperate House:—Henri Defosse, a rich, dark blue; Arnoldii, with small pale blue clusters; Gloire de Plantières, rich blue; Topaz, very free rich blue; Ceres, mauve-pink; americanus opacus, of dwarf compact growth, with pale pink blossoms; Perle Rose, and Georges Simon, compact habit, rosy-mauve.

Among dwarf shrubs, the varieties of Daboecia polifolia (Irish Heath) are of outstanding merit and value. Whether planted in lawn beds; as an edging to a shrubbery border, or massed in the pleasure grounds, they are most effective, flowering from early July until October. In addition to the rosy-purple flowers of the type there are several named varieties; atropurpurea has dark red-purple flowers and red-tinted foliage; alba, pure white flowers and light-green foliage; and bicolor rosy-purple and white blossoms. These distinct varieties may be increased by cuttings; seedlings produce a variety of shades of rosy-purple.

The late summer and autumn-flowering Spiraeas are worthy of special attention. Their varied habit of growth, and form of inflorescence and flowers, would supply material for a most attractive border of Spiraeas alone. Space will only permit mention of half-a-dozen of the best at present in flower, though it would be quite easy to name a score or twenty-five delightfully free-flowering shrubs. S. japonica vars. Anthony Waterer, red, Bumalda, rosy-red, and alba, pure white, are three excellent dwarf sorts. S. Menziesii var. triumphans, tall, rose; S. salicifolia var. latifolia, white, with a tint of pink; and S. sorbifolia var. sellipila, with plumes of small white blossoms, are all worthy of special note. *A. O.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

THE Knapweeds are a multitudinous family, and, judging from what one sees in flower gardens, not in much favour with amateurs. Centaurea montana, indeed, is commonly grown in its different colours, and the blue Cornflower, C. cyanus, is a favourite annual; but there are several fine species which are not grown so often as they deserve. I confess to being hopelessly puzzled about the nomenclature of this and kindred genera. For instance, I secured in that rich mine of out-of-the-common hardy plants, the Comely Bank Nurseries in Edinburgh, a plant of delicate beauty under the name of Aethiopappus pulcherrimus, which I understand is now to be known as Centaurea pulcherrima. It has soft, silvery, pinnate leaves and large, loose heads of pinkish-mauve flowers—a charming little plant growing only fourteen inches high. From the same nursery, I obtained two other herbs named respectively Cnicus pulcherrimus and Centaurea pulchra, both vigorous things, three feet high and more. Seeing that nearly all the species formerly classed as Cnicus are now transferred either to Centaurea or Cirsium, how shall a plain citizen label his treasures? More years ago than I care to enumerate I brought back from the Bernina Pass Centaurea Rhaponticum. It has flourished here ever since, but I have never met with it in any other garden except in those to which I have conveyed it. A meet companion for it is C. macrocephala, the great golden Thistle-heads of that species contrasting well with the reddish-purple of the other.

The Arum family contains many species of great beauty as well as others whereof the appearance is distinctly repulsive. Surely there is no more hideous flower than that of the evil-smelling Dragon's Mouth from Corsica. This once went by the name of Arum crinitum, which was changed under competent authority to Helicodiceros crinitus, and now, according to the same authority, is to be addressed as H. muscivorus. The latest is certainly an appropriate title for the lurid, purplish spathe, some ten inches long, in which lolls a hairy, black spadix, exhales the fetid odour of carrion, thereby attracting innumerable flies which creep down the throat, but are prevented by the hairs from returning. This plant has flowered abundantly this year, and the withered spathes are now packed with masses of dead flies. Despite its gross ugliness, I would be sorry to be without this strange freak of Nature, were it only as a foil for fairer things.

Among those fair things on August 1 there is none more delightful than Plagianthus (Gaya) Lyalli. We treated this New Zealander when it first came to us to the securest shelter from storm that could be given it; but it laughs at our sea winds and shrinks neither from frost nor storm, although both its tender green foliage and large white flowers might be expected to be among the first to suffer. The late Mr. Cheeseman did not indulge in rapturous praise of the plants which he made his life-study, but he noted Gaya as "one of the most beautiful trees of the New Zealand flora." It has the special merit of delaying its display until so many other flowering trees and shrubs are past. The variety ribiflora, with pubescent foliage, has not yet flowered here.

A very beautiful plant, under the name of Solanum auriculare, came safely through last winter against a south wall; this must be a mis-rendering of S. aviculare, which Cheeseman describes as native of both North and South Islands of New Zealand, as well as the Chatham Islands. But he notes the flowers as purplish or white, whereas the blossoms on our plant are as large as a florin, the corolla full violet, setting off the bright yellow cone of clustered anthers so characteristic of the genus. I know not whence or from whom this choice plant came here, but it promises to be a notable acquisition, and, if it was a gift, I owe cordial thanks to the donor thereof. *Herbert Maxwell, Monreith.*

NOTES FROM EDINBURGH.

THE remarkably cold and unpleasant weather of June had the effect of retarding growth and preventing many plants and shrubs from flowering in their proper season. The recent heavy rains, with bright periods, have, however, made amends and the marked improvement is welcome. Herbaceous plants are short in stature and not a few late in flowering in comparison with normal seasons. Plants such as Dahlias are far behind their time and have only added a few inches to their height in the last few weeks.

Despite the adverse conditions, flowering shrubs are in evidence and many are adding beauty to the garden in sheltered borders and walls or as isolated specimens. On a southern wall the beautiful Fremontia californica is at present in full flower. Its bright yellow flowers, two inches across, cordate-lobed leaves and young shoots with rich brown tomentum, make it very attractive. On the same wall a fine robust plant of Leptospermum scoparium Nicholii is ablaze with pendulous branches of crimson flowers, and mere words fail to adequately express their charm and beauty. In the Rock Garden the species L. scoparium, and a family of self-sown seedlings are all flowering profusely. This hardy shrub is worthy of every care and when in flower has a very attractive snowy appearance. It is a native of New Zealand.

In a sunny corner many specimens of the genus Diervilla give a wealth of bloom and variety of colour. D. florida and the variety candida are noteworthy. Hybrids of this decorative family are more common in cultivation than the species, and Eva Rathke and Gloire de Casquet may be taken as representatives of good colour.

Among the many beautiful species of the Rose family, Rosa Moyesii, from China, holds pride of place. Its rich crimson, single flowers are extremely beautiful and its habit makes it useful for the wall or as an individual specimen in the collection. Many forms of this species are in cultivation and one which is particularly favoured is the variety rosea. Rosa macrophylla, a native of the Himalayas and China, is also a very handsome single-flowered species. Growing twelve feet high and producing countless rose-pink flowers it is very attractive.

Another tall species, R. Webbiana, also from the Himalayas, resembles the latter and is remarkably showy, with delicate pink flowers of good size.

A stately, well-grown shrub, Carmichaelia flagelliformis, is densely clothed with tiny clusters of minute, white, Leguminous flowers, the purple keels of which greatly enhance their beauty. The countless number of flowers crowding the shoots, together with the small leathery leaves, make this shrub unique and assure it a place among the less common flowering shrubs. It is a native of New Zealand. The evergreen Helichrysum antennarium, from Australia, is clothed with clusters of soft, composite heads and although not showy is unique. In addition, its fragrance might be compared to that of our common Hawthorn. In the same family Olearia ilicifolia, a pretty shrub from New Zealand, is flowering in a sheltered position. Although it hides its flowers somewhat, it is attractive on account of its serrated, leathery foliage.

Of the well-known family Escallonia there are many species and hybrids in flower at present. Escallonia edinensis (rubra × Philippiana) has been greatly admired for its panicles of soft-pink coloured flowers. Escallonia Philippiana × langleyensis, with rose-coloured flowers, is also attractive.

The Jerusalem Sage, Phlomis fruticosa, is an admirable, showy, hardy shrub. Whorls of dusky yellow flowers stand erect from among the wrinkled leaves which are clothed with a white tomentum underneath. This shrub adapts itself to any position in banks, borders, or shrubberies. A few good specimens of Tricuspidaria lanceolata are flowering in sheltered corners. The drooping, dark-red flowers, like miniature Chinese lanterns give them a very graceful appearance. Although not too hardy this species should be given every chance in the shrub collection.

Viburnum Henryi, a native of Central China, flowers at this season, and adds beauty to the shrub border. It is very showy, with glossy dark green foliage and produces quantities of creamy-white flowers. Bright masses of Cistus maintain the colour effect in sheltered nooks in the rock garden; Cistus laurifolius, C. Delilei, C. purpureus and C. Silver Pink, are among the most attractive members of this useful and charming family. *A. McCutcheon.*

MECONOPSIS INTEGRIFOLIA.

The photograph enclosed (Fig. 46) shows Meconopsis integrifolia raised in heat from seeds sown in February last year, hardened off and planted out in May, and which flowered during May and June this year.

A few plants of Meconopsis simplicifolia, Bailey's form, were planted among them, and, as they flower at the same time the combination of blue and yellow was very pretty.

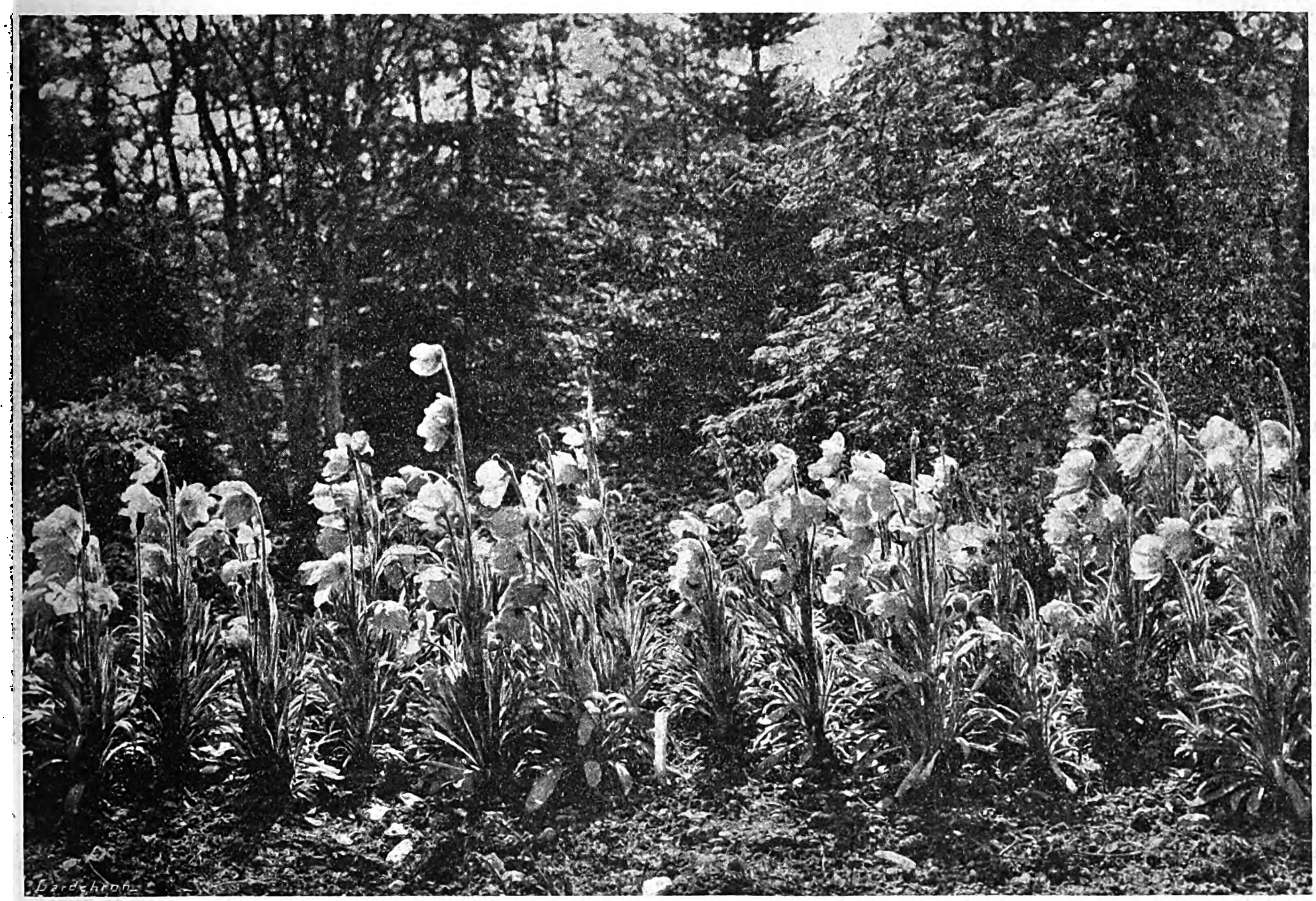

FIG. 46.—MECONOPSIS INTEGRIFOLIA AT BLINKBONNY.

The past winter was a very disastrous one for all Meconopsis. Owing to the very open and wet weather the plants kept growing all the winter, and where they were grown in soil which did not drain quickly, whole batches of fifty to sixty plants damped off in early spring and any that were left succumbed to the five days' frost we experienced at the end of April.

The plants shown in the illustration are growing on a slight slope, which is well drained and not one among them died during the wet winter.

In Perthshire, all the species of Meconopsis I grow like a moist soil, but the drainage must be good, especially in a wet and open winter.

During the winter before last, the ground in my garden was frozen from early November to the middle of January, but I lost very few plants. The frost stops all growth and compels the plants to rest. *Andrew Harley, Blinkbonny, Kirkcaldy.*

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TWO VALLEYS IN THE WESTERN CAPE PROVINCE.

FOR the lover of flowers to find himself at the Cape in March is an exasperating experience. Everywhere one is told, "Ah! you should have come in September." Driving over the famous Cape Flats, memory goes back to many an old volume of the *Bot. Mag.*—"habitat, Cape Flats," while now a barren stretch of white sand lays before you, broken only by a few low shrubs and the usurping Eucalyptus. Here, you are told, grow spring flowers in such profusion that the Alpine meadow itself must take a second place.

The South African autumn is not, however, all disappointment; the eye of faith can clothe the hillside heaths with their respective flowers, and there are still many plants to be seen in full blossom; Amaryllis Belladonna makes its surprising appearance through the dusty wayside soil, while upon the higher levels Nerines are showing in the tough herbage. The autumn flowers, we soon find, need seeking, and are none the less attractive on that account.

The Drakenstein and Hex River Valleys with their widely different floras are of special interest; the Drakenstein with its hundred inches of winter rain and summer drought, and the Hex River with a meagre eight, make them, though only twenty-five miles apart, as of different worlds.

The Drakenstein (Fig. 47) was formerly well wooded, the home of elephants, but the early settlers found a treeless valley, covered by a low scrub and watered by a river and many mountain streams. Here came the French Huguenots, searching for religious freedom and here they planted their vines and fruit trees and left in the names of many of the farms, such as La Motte and Languedoc, a record of their origin before they were merged in the Cape Dutch people.

When the scourge of Phylloxera swept vine-growing from the valley, the vision of Cecil Rhodes foresaw the possibilities of an export trade in Peaches, Pears and other fruits, and in this valley is now grown a great proportion of the fruits which are so welcome in England in the winter and early spring. The culture is mostly, however, confined to the valley floor and lower slopes, and above this the veld lies untouched save for the curse of bush fires and the selective grazing of the sheep under whose influences it is gradually changing its character. The planting of exotics for afforestation is tending in the same direction, as below the Pines and Eucalyptus the native flora is choked and finally vanishes.

Still, South Africa is a large country, and there are many valleys within fifty miles of Cape Town where even the surveyor, much less the botanist, has never penetrated, which may yet hold treasures unknown to our herbaria.

For the gardener, the Cape suggests first of all Heaths, and these are the most prominent inhabitants of the "bush." There can be, I imagine, few weeks of the year, when some of these are not in flower, and though in the Drakenstein there are but few which bloom in March, one may see Erica cerinthoides with its head of wine-red flowers on the lower slopes, and higher up are many dwarf species, reminding one of our native Calluna and the Mediterranean Erica herbacea.

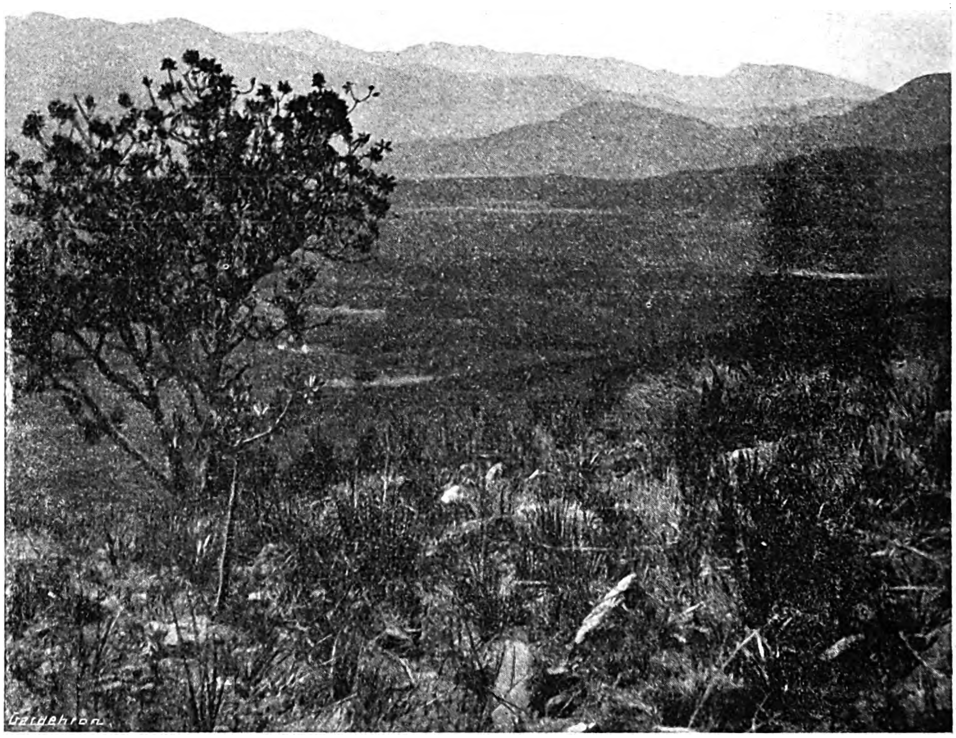


FIG. 47.—THE DRAKENSTEIN VALLEY.

On the high uplands of Caledon, in a more westerly direction, large stretches of a fine pink Heath, resembling E. australis in flower, but of a "Pink Pearl" tint, washed the slopes with a haze of colour. Among the Heaths grow many plants of Heath-like habit and leaf, but their flowers betray them as imposters, and they have merely adopted the same means to resist the summer droughts.

To toil up these slopes, with a shade temperature of 95° and a hot "Sou-wester" blowing, makes one realise the terribly dry conditions which these mountain Heaths experience, far different from the swamp-loving species, the Vlei dwellers, which make several feet of growth each year.

There are also a few species such as E. thymifolia, E. triflora, etc., which will thrive in partial shade. It is therefore an important point for those who grow Cape Heaths at home to remember this wide range, from sea-level to 3,500 feet; the dry, upland varieties, and the marsh inhabitants all indicate the danger of a uniform treatment.

One of the most beautiful, still happily grown in this country, is Erica ventricosa, the French Hoek Heath, and a special pride of the Drakenstein valley. The Heaths are much localised, and those I have mentioned above as flowering in March are only a few of the family which have autumnal blossom. At the Kirstenbosch, in March, I saw E. Bowieana, E. grandiflora, E. taxifolia and E. subulata in full glory; the last-named, with its white, Lily-of-the-Valley bells made an unforgettable picture.

To the South African, the Proteas are a special possession, and even tea shops and matches are proud to borrow their name. In the Drakenstein they form round bushes in the valleys and on good soil small trees of fifteen feet in height, but their curious flowers, like a Globe Artichoke in fancy dress, were now over, with the drying seeds only left to witness their former splendour. On the higher slopes, just at the limit of the "bush," I was told of a Protea in flower, and after some hunting, I found it; a dwarf, with flowers seated on the ground, with "no visible means of support." The outer petals of a creamy yellow open out and reveal the stamens packed together, each tipped with glistening white as of unmelted snow. This is Protea lorea, (Fig. 48) and must be classed among the "more curious than beautiful," as, indeed, must the whole family be, in my opinion, but it is not wise to express this view at the Cape, where Proteas are accorded an almost religious reverence.

Higher up comes the last representative, a stunted tree of some ten to fifteen feet in height, a grove of which suggests the Olive groves of the Riviera. The leaves, however, are of a silvery grey, thick and fleshy, like a Crassula, and at first sight one would incline to put it in that family, but a Protea it is, though the specific name I could not ascertain.

Far more beautiful than the Proteas are their near cousins, the Serrurias; one of the rare centres where Serruria florida is found is at French Hoek, in the Drakenstein, but the natives very wisely refuse to reveal its whereabouts, though you may be considered worthy, as I fortunately was, to receive a few seeds.

The "bush" contains, beside the Heaths, many shrubs or sub-shrubs, Leucospermums, the "Pin Cushions" of local nomenclature; Aulax Pallasii, a feathery shrub whose yellow flowers defeat the tourists' camera; many silvery, Santolina-like shrubs; Statice, not now in flower; and, occasionally, an old gnarled Olive, which is presumably Olea verrucosa, the last-named suggesting that these barren slopes might grow the edible Olive no less successfully than the terraced hills of Italy.

At the limit of shrub growth, where the mountain rises a sheer wall, grows the tiny Gladiolus montanus (presumably), a six-inch, apologetic flower of dull purple, with thread-like petals, so small that one looks twice to assure oneself of its rightful family.

On the banks of the streams, often heard but not seen, grow Watsonias, their tall seed-pods telling of summer flowers. Often they are found quite away from water, so there is evidently a chance of certain species growing in the driest of soils.

Up on the rocky cliffs, in damp crevices, grow the marvellous Disas, the Cape's most lovely Orchids, but at the time of my visit, the rocks were hot under the burning sun, and courage failed me, so I left them to their neighbours, the baboons.

On the valley floor, I heard of fields of "Painted Ladies," probably Gladiolus debilis, but little was found in March. A Brunsvigia, the well-named Candelabra Plant, rears its Rhubarb-like stem, topped with twenty red flowers on upward curbing footstalks. A certain vanity seems to lead it to railways; rarely did I see it far from such places.

Leaving the fertile Drakenstein and driving up the Paarl Valley, with its many vineyards, and climbing over Bains Kloof—a marvellous piece of road-making—a descent is made into the broad valley, in which Worcester is the central town. Turning sharply north, the narrow defile of the Hex River is entered, and at once a different flora appears. The small rainfall of this valley makes it, to English eyes, barren and hopeless. As the mountains close in, leaving only enough room for the river, road and rail, the flora grows "curiouser and curiouser."

Aloes and other drought-resisting plants replace the Heaths, but even these hard succulents seemed at the end of their resources, as no rain had fallen in the valley for six months. Conspicuous among the rocks was the extraordinary Cotyledon fasicularis, a dumpy (Fig. 49) wasted trunk, now leafless, but with the stems of last year's flowers hanging on at irregular angles. The stem, with its suggestion of an aged elephant's leg, adds the last touch of fantasy by being soft to the touch—a finger sinks into it—and the local name of "Butter Tree" becomes reasonable. One has the impression that Heath Robinson must have been in consultation when it was designed.

As the valley widens out, there is a considerable rise until the Little Karoo is reached; this is the drought area, devoid of flower, but, after rain, full of colour and herbage. In March it seems as still as a coral-grown sea-bed; no flower or leaf seems possible. But there are tall stems, covered with seed-pods, of a Scilla with bulbs of human-head dimensions. Here and there investigation reveals a few late flowers of some Cotyledon (C. Wallichii, Fig. 50), but the general impression is of life waiting breathless and torpid for the reviving rain.

Regular mounds of green show up and prove to be Euphorbia mauritanica, far from its home. The brittle, coral-like branches, when broken, exude a bitter milk, dangerous to sheep and burning to the skin.

The air on the hills is fresh at seven in the evening, and one turns back to the sun-baked valley and to the boundless hospitality of colonial life. And there the night falls quickly and the stars, with their unrivalled southern brilliancy seem also hushed and waiting for the rain. Water! The master word of South Africa. *E. A. Bunyard.*

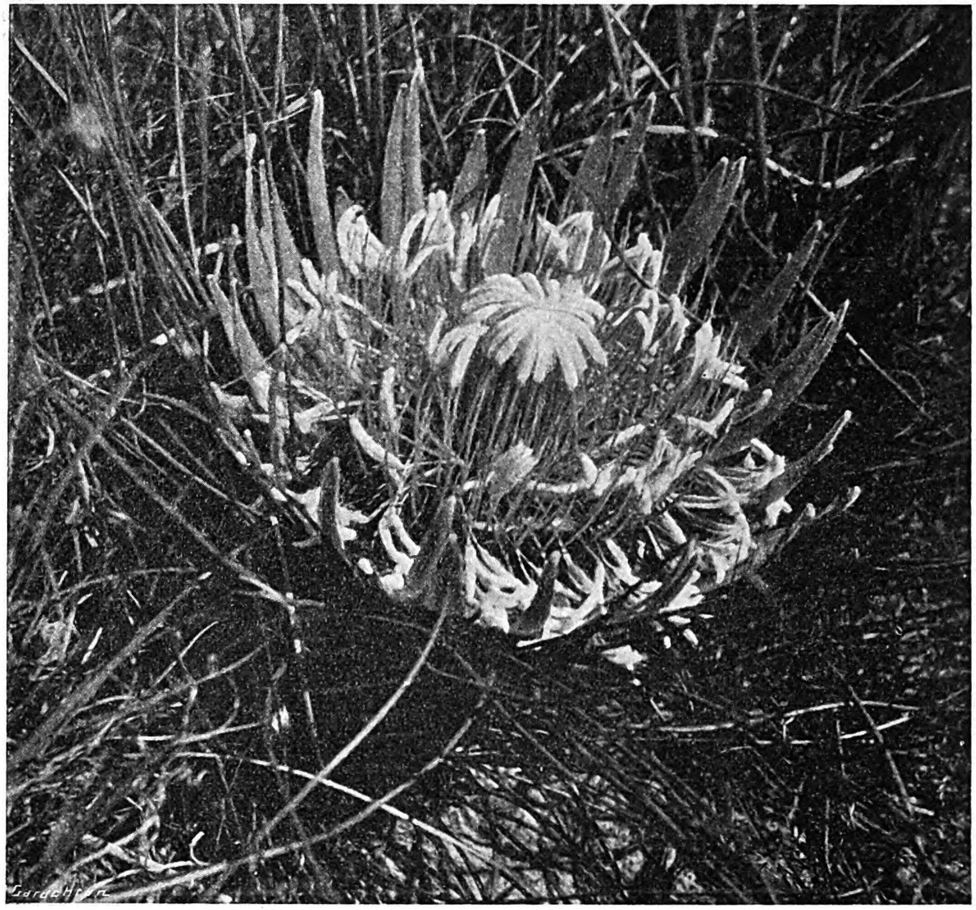


FIG. 48.—PROTEA LOREA.

LILIUM FARRERI.

In the Royal Botanic Gardens, Kew, and in certain other gardens in the country, may now be seen the fast-fading flowers of a dainty Lily from the high mountains of the Chino-Tibetan border. It will probably be labelled Lilium Farreri, but may possibly still be grown under Farrer's numbers 188 and 449. At Kew it is to be found in the Duke's Garden among Rhododendrons with other beautiful and interesting Lilies, and also in the rock-garden. Though it does quite well in the latter place, the "bay" in which it is growing hardly provides for the "steep and shingly banks amid light coppice" which Farrer describes as the natural habitat of this charming Lily.

The slender stems rise gracefully to a height of some eighteen inches, from a stoloniferous root-stock, and are thickly set on the lower portion with linear-lanceolate, cauline leaves two inches to three inches long and less than half-an-inch broad. From one to four flowers are borne in an umbel, surrounded at the base of the flower-stems by an involucre of bracts, the four-inch pedicels having a smaller bracteole near the middle. The pedicels fall slightly outwards, make a double turn at the apex, and are terminated by the drooping, white flowers, the reflexed petals of which are dotted with purplish-lilac, especially near the centre of the flower, where a broad green line runs for a short distance down the middle of each segment. The corolla-segments are about two inches long and half-an-inch wide, and of true Martagon shape. The anthers are pink, changing as they open to orange, and the style and stigma are pale emerald.

Now, as to the correct name of this Lily. Mr. E. H. Wilson, in his *Lilies of Eastern Asia* states that it has been described under the names of L. parviflora, L. Forrestii, L. Farreri, and variety gracilior of the well-known L. speciosum, though why it should be classed with L. speciosum is difficult to understand, as the latter plant belongs to the Archelirion section. Finally, Wilson pronounces it to be synonymous with L. Duchartrei, and, in fact, he describes it under this name. The same author emphasises the stoloniferous habit, and his description appears to fix the Kew plant, except perhaps in the number of flowers. It appears that L. Duchartrei varies considerably and Wilson has swept all the allied forms bearing other names into one common aggregate under Franchet's L. Duchartrei. He gives its altitudinal range as from 8,000 to 11,500 feet, and its habitat as Western Szechuan, Kansu and North-western Yunnan. L. Duchartrei was discovered by Abbé Armand David, at Mupin, in 1869, but it was not introduced into cultivation until 1903, when Wilson sent it home while collecting for Messrs. J. Veitch and Sons of Chelsea, with whom it flowered in 1904, Kew flowering it the following year. L. Duchartrei is figured in the *Bot. Mag.* (Vol. 132, 1906, t. 8072), but the *Bot. Mag.* also figures L. Farreri (Vol. 146, 1920, t. 8847), and there is a vast difference between the two plates. That of L. Farreri represents, of course, the Kew plant, the only fault being that the spotting of the flowers might be a little stronger. The figure of L. Duchartrei shows pinkish-lilac spots and a very pronounced pink or mauve reverse to the segments. Perhaps of even more importance is the fact that the plate of this plant shows seven flowers and one bud, in two whorls, although it is expressly stated in the text that L. Duchartrei "rarely produces more than three flowers on one stem," and nothing is said about a Candelabra Lily!

To return to the form which, in this country, still retains the title of L. Farreri. At the Chelsea Show of 1920 a specimen was shown by Major F. C. Stern (who received seeds from Farrer and gave Kew their specimens), and received an Award of Merit under the name of L.

Farreri. It is figured in *The Gardeners' Chronicle* in the account of that show (Fig. 133, p. 284), and also in *The Garden* (June 12, 1920, p. 302). At Vincent Square on July 8, 1924, Lt.-Col. Messel showed plants of L. Farreri; a First-Class Certificate was awarded, and specimens were figured in the *Gardeners' Chronicle* of July 26, (Fig. 22, p. 61). The plant had evidently become better established by this time, for the report states that those shown were much stronger than on the previous occasion.

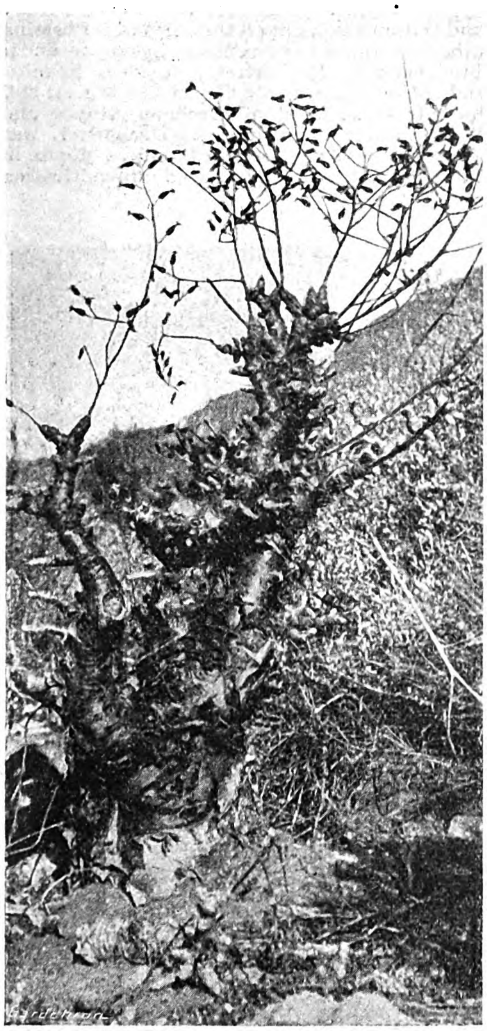


FIG. 49.—COTYLEDON FASICULARIS.
On the Little Karoo.
(see p. 111).

In *Gard. Chron.* (Vol. LXVI, 1919, p. 76), Mr. Turrill states that investigation suggests that L. Farreri belongs to a species hitherto undescribed, though he admits its affinity to both L. Duchartrei and L. polyphyllum. Mr. Turrill also mentions that among other characteristics L. Farreri is distinguished by the hairs borne in tufts at the nodes. This appears to me to be a variable factor, but I have not had the opportunity of making a microscopical examination. Suffice it to state that in many of the plants, it is not very obvious. Mr. Turrill, in common with other observers, also remarks on the strong scent, and this delightful Lily certainly is fragrant. Finally, Mr. Grove wrote a masterly article (*Gard. Chron*, July 25, 1925, p. 69). on the specimens shown at Vincent Square. He calls the plant L. Duchartrei var. Farreri, and quotes Farrer's notes on Lilium sp. F. 183. It appears that in reality Purdom found Lilium 183, and that Lilium sp. F. 449 was a mixed lot of seed which contained, among others, L. Farreri. Col. Messel showed F. 449 because he received his seeds from Major Stern, to whom Farrer had sent seeds under that number. Mr. Grove believes it to be a fixed variety of L. Duchartrei and it is interesting to note that he has "not found it intolerant of lime," because Farrer tells us in *On the Eaves of the World* that the basic rock over all the Kansu-Tibetan border is limestone, except for occasional small outcrops of other formations. Mr. Grove remarks that small, single-flowered plants always have narrower leaves than those of fully grown normal specimens, and he has also noticed the difference in height, and size and colour of flower, between L. Duchartrei and L. Farreri in the *Bot. Mag.* The article also contains some succinct hints on the cultivation of L. Farreri.

These notes, which have run to greater length than was originally the intention of the writer, do not necessarily prove anything—they simply summarise the position at the moment. I would, however, suggest that the whole tangle of nomenclature be "boiled down" to this. The European Martagon Lily has Asiatic representatives, which are all forms of a single species, since there must be a parent species—a centre of origin. This species produces variations throughout its geographical range. Thus, we have forma polyphyllum in the Himalaya, forma Duchartrei in Western China, and forma Farreri to the north of this, along the Chino-Tibetan border. There are, of course, other variations, each one differing in accordance with the altitude, climatic conditions, etc. It is therefore necessary that particular care be taken in diagnosing any one of the forms as being worthy of specific rank, as a variety of any one form, or as being synonymous with one of them. Care and undisputable proof are needed before a definite statement be made. If this is not so, why are there differences of opinion? As it is the tyro is left helpless in the whirlpool of botanical exactness (or inexactness!), which has been unable to draw a clear dividing line between a species and a variety. *L. B. C.*

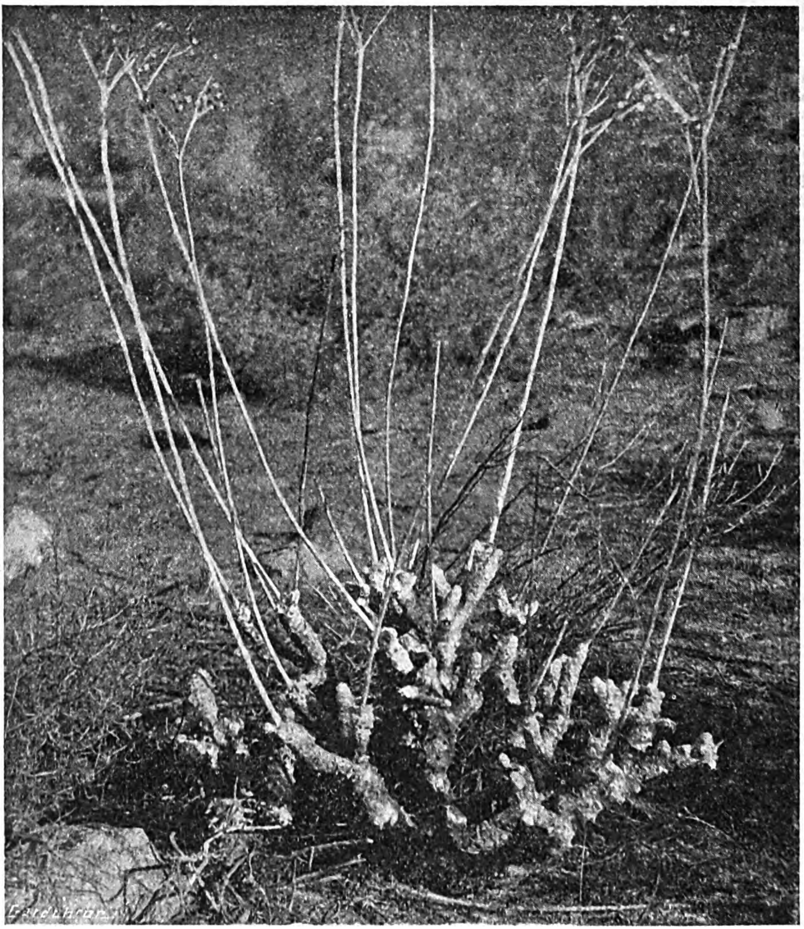


FIG. 50.—COTYLEDON WALLICHII.
"Like corals on a deep sea-bed."
(see p. 111).

INDOOR PLANTS.

APHELANDRA NITENS.

One of the most beautiful plants for flowering in five inch or six-inch pots for the embellishment of the intermediate house or stove during the winter months is Aphelandra nitens. The bright orange-scarlet flowers spring from the axils of large bracts which are adpressed in such a manner as to form a quadrangular spike about six inches in length. The individual flowers do not last very long, but as they open in succession the spike remains in good condition for an extended period. The foliage of this Aphelandra is attractive; the leaves are about six inches long and half as broad; the under surface is of a deep reddish-purple hue and the upper side of a rich, dark bronzy-green colour, which shines as if covered with a coat of varnish.

Propagation is effected by means of seeds or by cuttings of partially ripened wood which may be inserted any time during the spring or summer. Aphelandra nitens succeeds in an intermediate or stove-temperature and must be kept shaded from strong sunlight. *T. H. Everett.*

MITRARIA COCCINEA.

It is indeed a pleasure to read that Mitraria coccinea has received an Award of Merit. But what has the horticultural world been doing during the eighty odd years this plant has been growing in gardens? Admittedly it is not hardy in the north, but it will grow outdoors in the South of England, as evidenced by the report, on page 78 of this journal, that it is to be seen in Cornwall. I may add that Mitraria coccinea is growing in at least one rock garden much nearer London than Cornwall, where its roots go back deeply into a rocky cleft—perhaps a yard or two. There it flowers, not very profusely, but makes wonderful growths that stream out of the gaping crevice and throw a rambling mass of foliage down the cliff-face.

But it is in the cool greenhouse that Mitraria coccinea is seen at its best in this country, where the scarlet tubes set in the framing of dark green foliage are an ornament for many weeks, whether the plants are grown on the flat, trained up a trellis, or, best of all, in a hanging basket.

Mitraria coccinea enjoys generous treatment—good loam, leaf-mould, a little sand, and a dash of peat, with a dusting of fertiliser now and then or an occasional dose of liquid manure when coming into bloom. Given good food and freedom from insect attack M. coccinea is a joy to behold every June and July. One last hint—it likes plenty of moisture and glories in a shower bath from the syringe on hot days. Propagation is easily effected by cuttings after flowering, and hand-pollenation will secure a plentiful supply of seeds. *L. B. C.*

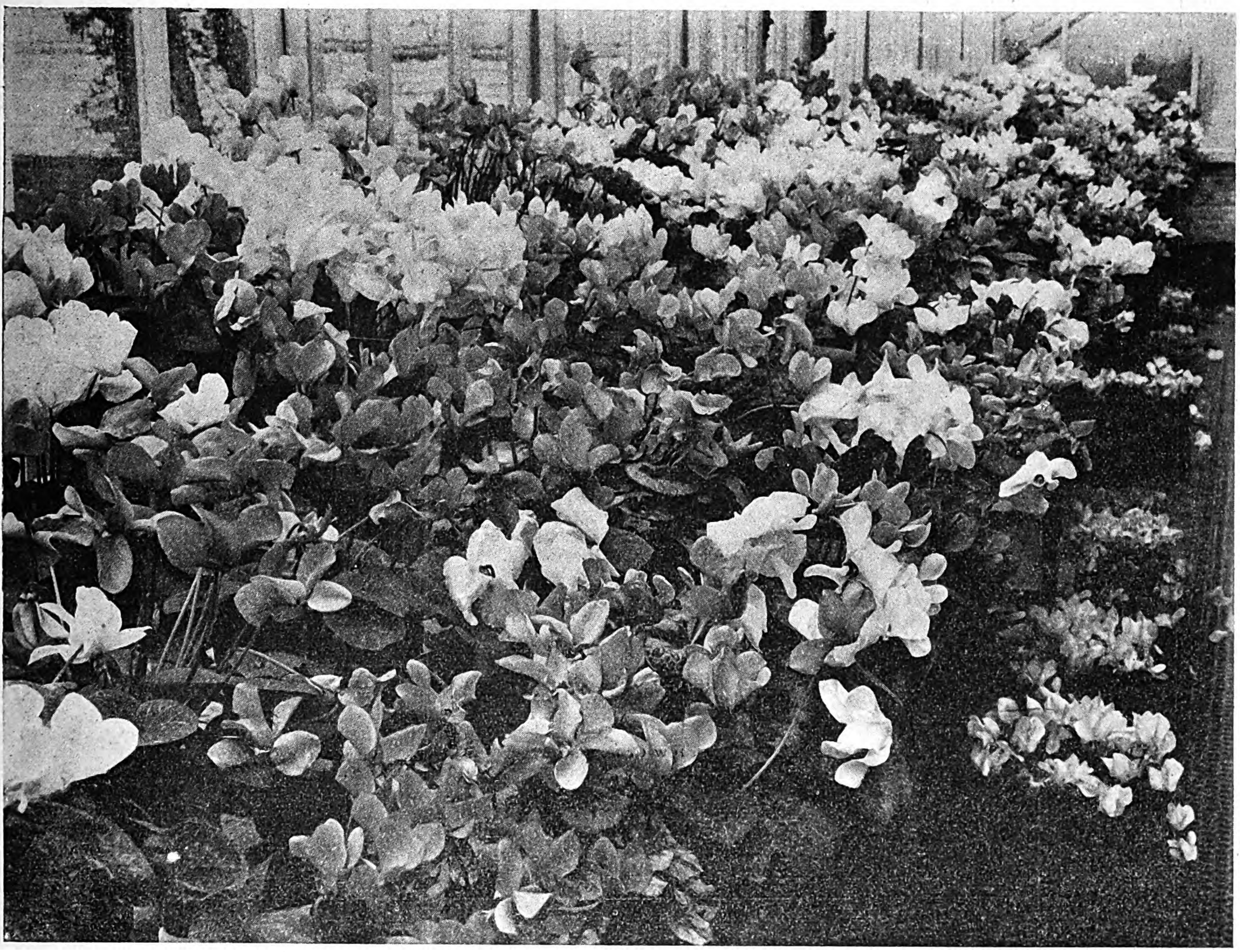


FIG. 51.—CYCLAMENS AT WOBURN PLACE, SURREY.

CYCLAMENS.

When well cultivated, Cyclamens are among the most useful plants for decorating the greenhouses or mansion during the winter months.

The photograph enclosed (Fig. 51) was taken in February of the present year and shows what a fine display Cyclamens produce.

Seeds should be sown in August in well-drained, clean pans, using a compost consisting of three parts good yellow loam, to one part of leaf-mould and silver sand. Thin sowing is essential, placing the seeds on an even surface and just covering them with silver sand. Place the seed-pans in a warm, moist atmosphere, cover them with a piece of glass and afford shade from bright sunshine until germination takes place. So soon as the seedlings appear, remove the glass but continue the shading and keep the tiny plants growing freely in plenty of atmospheric moisture. When the seedlings have made three or four leaves they should be potted into small sixty-sized pots, and kept growing steadily in a temperature of about 55°. Syringe them several times daily in bright weather and vaporise the house at intervals to keep the plants free from insect pests.

When further potting becomes necessary use the same kind of compost as before, but coarser, with a small amount of dried cow manure added.

As warmer weather appears in spring the batch should be removed to cooler quarters. I prefer to keep them growing in a cool plant house, standing them on an ash bed during the summer months, as under these conditions the grower is able to get at them better and attend to their wants. Provide shading during sunshine but otherwise allow them all the light possible, to encourage sturdy growths; use the syringe freely and maintain plenty of moisture around the plants, and they will not require much water at the roots; in the evenings spray the plants with weak, clear, soot water which will keep the foliage in a healthy condition. In September, if the Cyclamens have been growing in a cool frame they should be removed to a greenhouse with a temperature of about 50°. Continue the syringing over the plants and between the pots until the flowers appear, when it should cease. *Wm. Holden, Woburn Place Gardens, Addlestone.*

MESEMBRYANTHEMUM.

(*Continued from p.* 93.)

ARGETA, N. E. Br.

A very dwarf and practically stemless succulent perennial, forming tufts or clumps of many small growths on a firmly fleshy central root-stock. Leaves opposite, united at the base, 1–2 pairs to a growth, without internodes between the pairs, short and thick, flat above, keeled on the back at the top, firm, smooth, whitish or whitish-green. Flowers solitary, terminal, but at the side of the new pair of leaves, appearing sessile, but with the short pedical included between the bases of the old leaves, bractless. Calyx unequally 6-lobed nearly down to its union with the ovary, the two lateral lobes longer than the other four, laterally compressed, acutely keeled on the back and the keel continued downwards as a slight wing. Petals free, lax, in 1-2 series. Staminodes numerous, erect, with recurved tips, surrounding the stamens, filiform, acute. Stamens numerous, erect, in a central column. Stigmas 6, ascending or erect, filiform, shorter than the stamens. Ovary inferior, shallow, flat at the top, 6-celled; placentas on the outer wall of the cells. Capsule shortly obconic and rather shallow, compressed below and narrowly winged on each side, six-valved, with the sutures between the valves on the top slightly raised and slightly gaping; valves widely spreading or recurved when wetted, deltoid and as broad as long; expanding-keels contiguous at the base, then diverging, with broad, membranous, marginal wings; cells flatly roofed with transparent, membranous, flexible cell-wings, without a tubercle at the opening. Seeds many in a cell, ovoid, pointed at one end, smooth, brown.

The only known species is a native of the Klein Karoo, in South Africa.

The name is derived from the Greek, *argeta*, chalky, in allusion to the whitish colour of the plant. Although I have had it in cultivation for two years it has not flowered with me, so that I am unable to give a proper diagram of its floral structure.

A. petrensis N. E. Br. (Fig. 52).—Clumps 2–4 inches or perhaps more in diameter, and ¾–1½ inch high. Leaves as described under the genus, ascending or diverging, mostly 3–6 (but varying from 2–9) lines long, 2½–6 lines broad and 2½–4 lines thick, flat or slightly convex on the face, which is deltoid-ovate or triangular in outline, with sharp edges and acute or obtuse at the apex; in side view rounded at the apex, keeled on the back. Calyx rather compressed and acutely 2-edged, the two lateral lobes 2–2½ lines long, or possibly longer when alive, laterally compressed and acutely keeled down the back, the other four smaller and 1½–2 lines long, keeled on the back and with narrow, membranous margins, smooth, and of the same texture and colour as the leaves. Corolla about 9–12 lines in diameter; petals about 30, in 1–2 series, lax, 4–5 lines long and ⅓–½ line broad, linear, obtuse at the apex, reddish according to Dr. Muir, but appearing to be of a rich rosy colour in the dried flowers seen. Stamens erect, 1½ line long; filaments not bearded, surrounded by erect filiform staminodes, which are longer than the stamens and recurved at the tips. Stigmas 6, erect, 1 line long, filiform, greenish (?). Ovary flat at the top. Capsule as described under the genus, 2½ lines in diameter when closed, and about 4½ lines in diameter when expanded; valves cream-coloured inside; expanding-keels dark orange-brown; marginal wings colourless. Seeds about ⅓ line long, smooth, brown.

Riversdale Division: On hills in the Klein Karoo, growing among white stones, on Bokkaveld Shales at an altitude of 1200 feet; Muir 3622 feet!

Described from living plants and dried flowers supplied to me by Dr. J. Muir, who first discovered it, and who informs me that this neat-looking little plant grows among white quartz stones that are blinding in the glare of the sun and conforms so closely in general appearance to the stones it grows among that its presence is not easily detected until the eye has analysed its surroundings and discovered that plants as well as stones are present on the ground, and when that is once realised the person finds that he "has been walking over and upon the plants at every step, and becomes astonished at two things; firstly, that he had not noticed the plants at first, and secondly that he had noticed them at all." Under cultivation with me, this plant has become much greener than when first received.

Fig. 52 is from a photograph of the plant as it grows in South Africa, about two-thirds its actual size, taken by Mr. R. A. Dyer, to whom I am indebted for permission to make use of it. *N. E. Brown.*

(*To be continued.*)

ALPINE GARDEN.

ANTIRRHINUM ASARINA.

There is no better plant than this for a really hot dry wall or rock crevice. Here it has taken possession of one of the driest walls it is possible to conceive, where the rounded stones, ill-adapted for the retention of moisture, are backed by loose shale and overhung by a canopy of shrubs. Yet between these dust-dry, sun-beaten boulders this Antirrhinum has become firmly established, the colony increasing by self-sown seedlings year by year. No other plant that I am acquainted with which possesses "no visible means of support" is able to creep about the vertical face of a wall so successfully without its branches becoming detached and loose. Yet these branches are of a frail, fleshy and brittle nature and perhaps a couple of feet in length.

A. Asarina (*syn.* Asarina Lobelii) is a native of Italy and though introduced to this country so far back as 1699 it is uncommon in gardens to-day. The heart-shaped, opposite leaves, with scalloped margins, are pale grey-green, velvety to the touch, yet exceedingly sticky. Indeed the whole plant is so glandular that the stems and foliage may often be seen covered with the little black seeds which have clung to their gummy secretions. Ants and other small insects may also be found adhering to them.

The flowers are large, about one-and-a-half inch long, and of a pale ivory-yellow, delicately flecked on the lip with red. Here this is one of the earliest of Antirrhinums to come into bloom and it continues flowering without a break until autumn. In a really dry, suitable spot A. Asarina is reliably perennial. It is easily raised from seed, but self-sown plants, as is often the case, always seem to be the more robust. *N. Wales.*

DRYAS SUNDERMANNII.

This vigorous hybrid (D. octopetala × D. Drummondii) promises to eclipse, in popularity at any rate, both of its parents. In a good many gardens seen this year there were broad carpets of it and few or no plants of the others. It is not difficult to understand this when one realises how much more amenable to cultivation the hybrid is than the species, and one might regret the preponderance of the former were it any less meritorious than it is. I do not suggest that D. Sundermannii has the charm and quality of D. octopetala at its best, but it is a very delightful understudy and its willingness to do well under almost any conditions is an attribute of no small value.

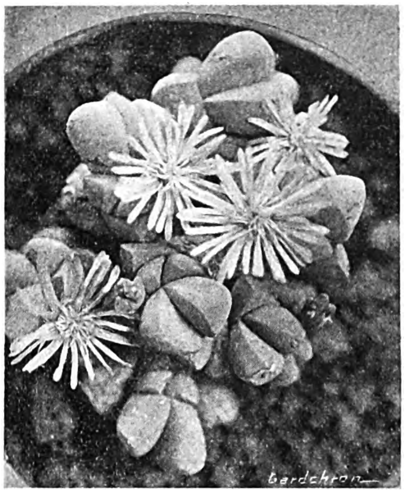


FIG. 52.—ARGETA PETRENSIS, N. E. Br.

D. Sundermannii has the same prostrate, mat-forming habit as its parents, but the foliage is rather a brighter green than that of the European alpine. In the blossom it comes about mid-way between the two. The flowers are nodding, but do not droop so much as those of D. Drummondii, and while they are a good deal larger than those of the latter, being fully an inch across, they are not so big as those of the best forms of D. octopetala. In the colour, again, they have inherited some of the yellow of the one and the creamy-white of the other, the result being an attractive ivory tint. The blooms are produced in great profusion on two- to three-inch stems, and if the plant has a ledge about on a level with the eye the effect afforded by a well-grown carpet of this useful hybrid is singularly pleasing.

OXALIS MAGELLANICA.

This cheerful little Wood-Sorrel has been blooming since May and looks like continuing until autumn. It is a native of antarctic regions and seems to prefer rather a cool but free soil with full or partial sun. In such conditions it will extend by means of underground stems, making a neat carpet of dainty little dull-green, dark-stalked trefoils. Amid these the beautifully cupped, crystal-white flowers appear on one-inch stems. These are about half-an-inch across but they often look larger by contrast with the smallness of the leaves. *A. T. Johnson.*

HYPERICUM OLYMPICUM.

The rock gardener finds many real treasures in the species of Hypericum of dwarf stature and were he restricted to one or two of these he would find it difficult to select among them. This is not said by way of disparagement to the charms of H. reptans, which some eminent judges of rock plants have included in their selection of "the hundred best alpines." Apart from it, however, there are others which are so lovely in their way and which also possess greater brilliancy of flower, a feature which cannot be ignored, and H. olympicum, the subject of this note, is one of these. It comes from warm, sub-alpine parts of Greece and also penetrates into Russia and Asia Minor. As it grows naturally in stony soil, it may be deemed necessary to give it a warm place in a light, gritty compost.

H. olympicum is well deserving of such little considerations, as it is a great beauty when in bloom and is quite attractive even when the flowers are closed, the yellow buds looking delightful beside the narrow, glaucous leaves, which in themselves are very beautiful. Well might Mr. Reginald Farrer call it a "treasure," and, seeing it in flower in my rock garden from about the middle of July, I am impelled to write a note in its praise. It is only from six to eight inches in height and the pretty bushlet is adorned with several wonderfully large flowers of a most brilliant golden hue. It is increased by cuttings or seeds. *S. Arnott.*

NURSERY NOTES.

JAMES CARTER AND CO.

A casual visit a few days ago to Messrs. James Carter and Co.'s establishment at Raynes Park proved very interesting. There was ample evidence that very great improvements have been made during the past year and what has proved a very difficult piece of land to deal with has now been brought into a high state of cultivation. In spite of the rain the large Rose beds in front of the entrance to the stately offices and seed warehouse are gay with fragrant flowers, while the lawns are in perfect condition.

A large circular space divided into several segments by narrow-paved paths and having a dovecote for its centre, contains a magnificent display of Marigolds (Calendula). There are several thousands of plants and the variety is the handsome Cockade Orange, wonderfully true in form and rich in colour. Given a few days' continuous sunshine the effect of this mass will be magnificent. It was interesting to notice that in half the beds (alternates) the plants were a trifle dwarfer than the rest; transplanting had created a difference of three or four inches in height and yet so many people insist that Calendulas should not be transplanted.

Sweet Peas are looking wonderfully well and in the outdoor trials, undisbudded; wide-meshed wire frames are used as supports instead of sticks. Among the numerous flowers in bloom our attention was arrested by the deep yellow of Mignonette Golden Monarch, which is not only deep in colour, but carries big, cylindrical heads of bloom. Eschscholzias have always been favourite annuals with Messrs. James Carter and Co., and three varieties of outstanding merit are the semi-double Robert Gardiner, Enchantress, rosy carmine, and Chrome Yellow. Viscaria Blue Bird and its white counterpart, the new Egret, are excellent annuals deserving of wider popularity, indeed considering how freely market growers use

Viscaria cardinalis for pot cultivation, it is difficult to understand the comparative scarcity of these subjects in private gardens. Carter's Giant Annual Carnation merits commendation, for the sturdy, many-stemmed plants, raised from seeds sown on February 15, carry numerous useful flowers and an abundance of buds that only need a little sunshine to produce an effective display.

The old idea that Zinnias need sunshine and a hot season to do themselves justice is not borne out by the facts as shown at Raynes Park, because these tender annuals are flowering finely in a season that is remarkable for its lack of sunshine. Clarkias, Larkspurs, Godetias, Candytufts, scarlet Flax, a very rich blue form of Salvia patens, and a very fine strain of Shirley Poppies, all excite admiration.

Verbenas appear to enjoy the moist atmosphere of this lachrymose summer and the capital strain of these old-fashioned and useful flowers is a revelation of what can be done by continual and careful selection in the production of clear colours and sturdy habit.

Although the individual blooms of Hollyhocks are not up to the old florist's standard of excellence, the two strains of these stately flowers at Raynes Park are admirable for garden decoration, and, treated practically as annuals, they grow freely and are not subject to disease. The early-flowering ficifolia varieties were just past their best, while the later double and semi-double sorts are just beginning to make a floral display Seldom have we seen such large-flowered Petunias as those borne by Messrs. Carter's Giant-flowered Dwarf variety. We have seen their equals under glass, but never out-of-doors. Many of the big, frilled, exquisitely veined blooms exceed seven inches in diameter and each plant carries from six to twelve flowers.

Lastly, the annual Stocks are splendid in colour and habit; a new pale yellow variety was provisionally named Devonshire Cream during our inspection. The entire trial of Stocks is unusually interesting because the firm is growing several new continental strains side by side with its own.

PEACHES AND NECTARINES FOR COOL HOUSES.

Peregrine Peach is one of the earliest varieties to ripen in a cool house and if the fruits are exposed to light and sun they become very highly-coloured. As it is free setting and has a hardy constitution this Peach should be in every collection. Rivers' Early is another variety of first-rate flavour, and good colour when exposed to the sun; it is very free setting and follows the above in order or ripening. Early Grosse Mignonne is also of first-rate flavour and colour but the fruits are not quite so good in shape as those of the varieties mentioned. Dymond is of first-rate flavour, not highly coloured, but succeeds to the above-named sorts and is a very free cropper; it is followed by Bellegarde and Royal George. These six varieties are all excellent and provide a good succession. Royal George is not grown so much as in former days, probably because it is liable to mildew, but if syringed in the morning and not in the afternoon that difficulty may be overcome. I never syringe Peach and Nectarine trees in cool houses more than once a day and then in the morning.

Cardinal is one of the earliest of Nectarines, and produces very fine fruits if not over-cropped; the more the fruits are exposed to light and air the better will be the colour, and good colour means good flavour. Early Rivers is a large Nectarine, but lacking of flavour. Lord Napier, one of the best of the white-fleshed varieties, is well-known to most growers; when the fruits are approaching ripening it is advisable to shade them from hot sun as they are subject to scalding. Victoria is much later and needs the same care when ripening as advised for Lord Napier; I believe the fruits are subject to cracking in some gardens, but this is not so with me; I make a practice of withholding water from the roots so soon as the fruits commence their last swelling.

Rivers' Early Orange, is a yellow-fleshed Nectarine and one of the best in flavour and colour; it ripens about ten days or a fortnight before Pine Apple. The latter is very fine in flavour and colour and is followed by Humbolt.

So soon as the trees are cleared of their crops, all the old unfruitful wood should be cut away, leaving this year's wood for next year's crop fully exposed to all the sun, light and air possible. The ventilators should be open night and day. The trees may be syringed daily if red spider is present. Attend to the watering of the borders and see that they are soaked right through to the drainage. If the borders are in an exhausted condition, no time should be lost in making preparations for renewing them. Collect good fibrous loam from an old pasture land, and stack it up until the work can be attended to, and then chop it down roughly, adding wood ash, mortar rubble and horse-droppings if procurable, at the rate of one barrow-load of each to one cart-load of loam, with a good sprinkling of freshly-slaked lime and half-inch bones or bone meal. Mix all together, and allow the compost to remain in a heap for a day or two. Remove all the exhausted soil from the border and add the fresh material. As the work proceeds cut away the coarse roots and retain all the fibrous ones, laying them out in the new soil, in layers, as the border is filled up, making each layer quite firm. This work is best done just before the fall of the leaf. *E. Neal.*

FRUIT REGISTER.

APPLE DUMELOW'S SEEDLING.

This excellent culinary Apple, which is known also as Wellington and Normanton Wonder, should be planted as freely as the popular Bramley's Seedling is. Though not so vigorous on some soils, it is a success planted in moderately warm, well-drained ground.

It makes a fine standard on the Crab stock, and the fruits keep splendidly.

The fruit is somewhat acid, but has an agreeable flavour late in the season, which usually extends until April. In a fruit room where a low temperature can be maintained throughout warm weather in spring, it is possible to keep it in good condition until June. The fruit is of attractive appearance, being yellowish-green with a bright red tint.

The tree is most suitable grown as a natural standard. *Charles Hodgson, Acton Place, Acton.*

FRUIT GARDEN.

STRAWBERRY BRITISH QUEEN.

This fine, old variety is, or rather was, unsuited to the majority of soils, apparently growing to the best advantage in those of feruginous nature; the greatest success, however, that I have known to attend the culture of British Queen was in a garden where fresh stocks were raised annually, the young plants invariably carrying good, if not prodigious, crops of fine fruits.

Of the same type are The Queen, a vigorous grower and a heavy cropper; and Dr. Hogg, hardy and of rich quality. Even allowing due credit to the magnificent Strawberries now available, it is very doubtful if British Queen is excelled or even equalled for flavour, but for very many years its capricious behaviour has given rise to great disappointment; the British Queen flavour has been introduced into many of the newer sorts, but for the most part, delicious and well-nigh perfect as they are, they fall just short of the priceless old variety.

British Queen, sometimes called Myatt's British Queen, was raised by a Mr. Myatt of Deptford, and introduced to commerce in 1840; the fruits are large, cockscomb-shaped, smaller fruits being somewhat conical. The colour is pale red, unequally distributed and usually very pale at the apex; the flesh is white and exquisitely flavoured.

To other idiosyncrasies of this variety must be added the one of indifferent cropping in some situations, but, nevertheless, I sincerely hope that some growers still persevere with this old favourite.

Premier, I believe, was a seedling from British Queen and was, indeed, sometimes listed as British Queen Seedling. *Ralph E. Arnold.*

STRAWBERRIES.

It is generally admitted that very great difficulties have arisen during late years in the culture of Strawberries, and I desire to offer my experience through the columns of *The Gardeners' Chronicle.*

For some years past the Strawberry crop has been a source of great worry to me, but until the season of 1926 I was able year by year to get a fair crop of fruit, but in that year the plants failed entirely and a gardener placed in this position finds it a disagreeable task to explain to his employer the cause of his loss, particularly after having done all he knows to obtain the best results.

Until recent years Strawberry plants in these gardens made such vigorous growth in the first season that for some years I advocated this annual method of culture, but when, finally, plantings failed to grow in the first and second season also I became alarmed. In 1926 my plants failed entirely and my difficulty was to discover from whom I could obtain a clean stock of sound healthy plants. Many of my friends were experiencing the difficulty I was up against.

Meeting Mr. Laxton at the R.H.S. Hall, I pointed out my difficulty to him. He assured me he could supply healthy plants and I placed an order with him and among the varieties chosen were Royal Sovereign, King George and the Duke. When I received the plants it was late in the season and they were somewhat small, so I decided to pot up a number of them into six-inch pots with a view to planting out in the spring, the remainder being planted straight away into a prepared quarter. I have watched both lots anxiously, for those outside had little time to build themselves up to withstand the winter. By February they were smaller than when planted in September and I despaired of them ever making good plants, much less bear a crop. In this month the pot plants were placed in the ground, the weather at the time being favourable. In a week or two I could see a marked difference in the appearance of this batch, and again began to feel hopeful.

To sum up; at the date of writing (July 26) there is very little difference in the appearance of either batch. Each carried a light crop of excellent fruits but what pleases me most of all is the plants have produced a fine lot of strong, healthy runners from which I was able to complete a planting by the middle of July, and I am delighted with the progress they are making, thanks to the present showery weather.

It is evident that Messrs. Laxton Bros. have managed to keep their stock clean as a result, no doubt, of careful selection of strong vigorous runners year by year, and so long as they continue on these lines they will merit the confidence of their clients. *Arthur Bullock, Copped Hall Gardens, Epping.*

RED CURRANTS.

Varieties of Red Currants such as Fay's Prolific (syn. Cherry Currant), Raby Castle (syn. Victoria and Houghton Castle), Perfection and La Versaillaise are well-known and distinct kinds. The nomenclature of some of the other varieties is rather confused, but amongst these are some which are well worthy of cultivation.

Littlecroft Beauty is excellent for cultivation as cordons; it produces heavy crops, and the berries and bunches are of medium size; the fruit is a fine, rich colour, and the flavour is good. This Currant ripens early and is in much request for preserves.

Late Red Currants are very useful, and amongst the best, in addition to the popular Raby Castle and Red Dutch, is Fisher's Large Red, remarkable for its vigorous habit and heavy cropping. The fruit is of a pleasing bright colour, the berries being large and the bunches of medium length. During the season 1926, when practically all other varieties failed, this variety produced an excellent crop of clean fruits. This Currant should be given plenty of room owing to its robust growth. Single cordons may be planted four feet apart. Rivers' Late Red is notable as small seeded, and the large berries are appreciated where this fruit is in demand for dessert, and for flavouring ices. C. *Ruse.*

THE SPRAYING OF FRUIT TREES.

At the recent well-attended conference of Horticultural Organisers, Dr. Goodwin (late Principal of the Midland Agricultural College and now Advisory Chemist at Wye) opened a discussion on "Recent Developments in the Spraying of Fruit Trees." Firstly, he dealt with a number of factors in connection with insecticides and fungicides, as follows:—

(1) The spray must destroy insect and fungus; (2) The material should not be too dangerous so as to affect men or animals; (3) it should remain in solution or in suspension in water; (4) it should stick to the leaves; (5) it should spread well over the leaf; (6) it should cause little injury to the plant; and (7) its cost should not be too great.

He stated that there were many points to consider in the mixing of sprays, as ingredients mixed may react on each other. Bordeaux mixture and lead arsenate were safe to mix, but sulphur and lead arsenic could not be mixed; subsequently he mentioned the following advantages of dry sprays:—

(1) The work can be done more rapidly; (2) it is cheaper per unit area; (3) water transport is avoided; (4) there is a lighter load to move; and (5) no mixing is required.

He stated that sulphur sprays are generally used in Hop gardens, and are found very effective, the action depending on the contact of particles of sulphur with the fungus, hence the sulphur must be in a fine state of division. Sulphur is more effective wet than as a dry spray; the toxic effect is due to polysulphide.

Bordeaux mixture made with hydrated lime is best, and is much more convenient for small gardens than ordinary lime; he gave the following as a suitable mixture:—8 lbs. copper sulphate, 12 lbs. hydrated lime, and 100 gallons of water.

Dr. Goodwin considered that tar distillate washes were excellent for all insect pests, especially for checking Plum aphis, but must be applied when the tree is dormant. Oil emulsions would, he considered, be used more in the future, as they are very useful in the case of aphis attacks.

In the discussion, it transpired that powdery mildew of Apple trees is greatly on the increase in the imdlands.

VEGETABLE GARDEN.

WINTER RADISHES.

As these large Radishes are often in request during the winter for use in the salad bowl, seeds should be sown during August, in drills drawn nine inches apart, subsequently thinning the young seedlings to six inches apart in the rows. The flesh in the centre of the roots is strongly flavoured and rather tough, but near the rind it is mild and tender and this is the part which should be selected for use. The roots may be either left in the ground, or taken up and stored in sand until required.

Chinese Rose is a good hardy variety, oval-shaped, skin scarlet, flesh white. There are two types of Black Spanish, the long, and the round; the latter matures quickly on warm, light soils.

AMERICAN CRESS.

The American or Belle-Isle Cress (Barbarea praecox) is of excellent quality when grown in light, rich, moist soil on a shady border. An August sowing will yield a supply during the winter and spring. Young tender leaves may be secured by transplanting some of the seedlings four inches apart and protecting them with hand-lights, or with twiggy sticks and dry litter. When American Cress is needed the plants should not be cut too closely to the ground, indeed, during the winter it is a better plan to gather the leaves singly as the plants will then continue to grow and furnish a supply for a considerable period. *C. Ruse.*

PUBLIC PARKS AND GARDENS.

Leicester Parks and Recreation Grounds Committee recommends the purchase of nineteen acres of land for a recreation ground. The purchase price is £10,000.

Aberdeen Corporation Links and Parks Committee has recommended the lay-out of Hilton Recreation Ground at an estimated cost, including pavilion, of £4,885.

Athlone Urban District Council has resolved to purchase the King's Meadows for the lay-out of a recreation ground.

The Town Council of Ipswich has decided to accept the offer of Alderman W. F. Paul to give to the town seventy-six acres in the lower part of Stoke Park, for a recreation ground.

The Birmingham Parks Committee takes a special interest in the horticultural education of boys employed in the Parks of the capital of the Midlands and has authorised the instructors under an approved scheme, to afford the lads all the assistance possible in connection with the following subjects, any item of which may be dealt with in accordance with the seasons, to enable each student to prepare a diary and formulate a monthly essay:—

Sports Grounds—Dimensions and general upkeep of cricket, football and hockey pitches; tennis courts (lawn, grass and hard surface), and bowling greens; mowing, rolling, worming, weeding, feeding and draining; construction, dimensions of markings, boundary netting and equipment.

Implements—Mowing machines: Various makes, usage and maintenance. How to sharpen, use, and care for scythes. General knowledge of and maintenance of common tools.

Various—Gymnasia: Most popular and reliable structures, their general upkeep, cleaning and lubrication. Suitable requirements for dressing rooms.

General cleanliness of Lavatory and other conveniences.

Aviaries and Water Fowl: Suitable subjects and their care.

Drives and Walks—Construction, suitable materials, drainage and general maintenance.

Plants—Growth from seeds, propagation by cuttings, layers, buds and grafting; indoor and open ground; ventilation, shading and watering, with demonstrations. Drainage of pots, boxes and other receptacles for the purpose of raising seedlings.

Soils—Composts required for seed raising, and at different periods of growth. The various characters of soils should be demonstrated.

Manures—The use of artificial and other manures.

Roses—Cultivation and description of the several classes most useful for the embellishment of parks and recreation grounds; soil and position for the various classes; insect and fungous pests and when and how to destroy.

Herbaceous plants—Suitable subjects and their cultivation; their position in regard to height and effect.

Shrubs.—Ornamental, evergreen and flowering, suitable varieties and their cultivation.

Trees—Deciduous and evergreen for ornamentation and for street planting; cultivation and general maintenance.

Rock gardens—Formation, suitable plants and planting.

Summer Bedding plants—Suitable subjects for spring and summer displays, description of and cultivation; bulbs.

Annuals—Description; suitable subjects for the adornment of parks.

Various—Colour schemes for bedding plants. Formal designs versus informal or natural growth. The wild garden. The bog or semi-aquatic garden. The Japanese garden, with suitable subjects and their cultivation. Labels; preparation and description. Suitable subjects for growing under trees. Hedges and their maintenance. Plants which resent lime and caustic food.

Floral Decorations—Suitable plants for the decoration of large reception rooms, corridors, windows, recesses and staircases. The cultivation and general maintenance of these subjects. Arrangement and suitable subjects for table decorations.

Reports from Instructors regarding the progress of Students should be submitted quarterly and students encouraged to make weekly references to subjects of interest appearing in horticultural papers.

One of the great events of the year in connection with the Birmingham Public Parks is the inspection made by the members of the Parks Committee. We commend the idea to other towns because such a visitation is the means of enlightening many members of Parks Committees and at the same time encouraging the members of the staff.

Under the guidance of Councillor McDonald, Chairman, and Mr. J. Smith, the Superintendent of the Birmingham Parks, the Committee, accompanied by the Lord Mayor and Lady Mayoress, Alderman A. H. and Mrs. James, recently visited Small Heath Park where the old iron fences have almost disappeared and lawns and flower beds have been improved. Ashton Park, where the grounds have been reconstructed in keeping with the old hall, won the admiration of the Committee, the Italian garden on the west side proving especially interesting. At Pype Hayes Park the old English garden, herbaceous border and Lily pool were the outstanding features, while at Yardley Park another old English garden proved a great attraction. Salford Park, with its new bowling greens; Warley Park with its Rose gardens and pergolas; the Shakespearean garden at Lightwoods Park and the new paddling pool at Cannon Park, all interested the visitors and merited their compliments.

At the luncheon, Mr. J. Smith was complimented by the Mayor, who acknowledged the assistance the Civic Society has given at Aston Park and he expressed the desire that the Parks Department should be represented at the leading Birmingham Flower Shows. Mr. McDonald agreed that the parks and open spaces showed great improvement, but he hoped for further improvement and also for more generous treatment by the Corporation. He pointed out that Birmingham needed more natural open spaces and more playing fields and the City must look ahead and show enterprise in regard to the acquisition of open spaces, so that fifty years hence the inhabitants of Birmingham would be able to say that the City fathers of half a century ago had acted with great wisdom and foresight.

HOME CORRESPONDENCE.

The Hooded Gladiolus primulinus.—This plant, as is well known, was introduced from the neighbourhood of the Victoria Falls, where it grows in a perpetual cloud of mist; it was proposed, but happily not seconded, to call it "Maid of the Mist." We were told that the gracefully, down-curved central petal was an adaptation to such conditions, keeping the pistil and pollen dry. Reluctant as one is to shatter any legend so charming one could not forget that Gladiolus primulinus grows also in districts where waterfalls do not send up perpetual clouds of mist, and G. Quartianus, which Baker considered as very closely allied, has a wide range from Abyssinia to the Equator and on mountain-sides up to 8,000 feet. Furthermore, many other Gladioli which inhabit dry regions also have the protecting petal, such as G. alatus, from Namaqualand. What purpose therefore does the overhanging petal serve? I venture an answer to the query which may perhaps be worth consideration. In examining some spikes of G. primulinus growing under glass I noticed that the protecting petal was covered on its upper surface with pollen fallen from the flower immediately above. As the pollen ripens before the pistil it may therefore be a device to prevent self-fertilisation, and the fact that the lowest flowers expand first lends some strength to this possible explanation. It is to be hoped that someone will re-introduce G. Quartianus, and especially the red form, so that we may have the well-proportioned G. primulinus with colour, and not spoiled (in my opinion) by the necessity of taking colour from the large garden varieties. As a plant it is almost perfect as it stands, a tinge of green in the yellow being the only drawback. Its most valuable qualities—proportion and poise, almost Greek in their line—are ruined when its descendants grow twice as tall and look like a Gandavensis or Lemoinei which has not yet arrived. *E. A. Bunyard.*

Gaultheria trichophylla.—The name of the Gaultheria which received an Award of Merit at the R.H.S. Show on July 19, under Farrer No. 1191, is Gaultheria trichophylla, as stated in my article on "Farrer's Plants at Exbury" which appeared in your issue of February 19 last. A curious inaccuracy has appeared in your description as the Gaultheria was in fruit and not in flower, an inaccuracy, however, which is quite understandable on reading Farrer's original field note, which is as follows:—"A strikingly beautiful plant, on mossy, silty banks and mossy boulders in the half shade of the high-alpine woodland zone at 11,000. Quite prostrate; the calyx, after anthesis, develops into a great fat five-lobed 'flower' of the most brilliant lapis lazuli blue, lined with white, enclosing the pyroloid capsule." The birds find the fruits very much to their liking and unfortunately they disappear very quickly at the stage exhibited. *Lionel de Rothschild.*

Rust on Mint.—This disease (Puccinia menthae) spreads rapidly and often destroys the greater portion of the plot, just at the time when growth is progressing in the spring. I have found that a dressing of sulphate of ammonia at the rate of one ounce per square yard, if applied so soon as the attack commences, will stop the progress of the disease; the sulphate should be distributed evenly when the plants are quite dry, and well watered in so soon as possible. This does not eradicate the disease, but it stays its progress and ensures a good supply of Mint for the next few weeks; when planting time comes, a new plantation should be made on a clean site, with healthy roots. *W. H. Divers, V.M.H.*

Embothrium coccineum from Cuttings.—In reply to your correspondent's query published in the *Gard. Chron.* of July 16, we have had the same experience with Embothrium coccineum. A July gale broke a large top shoot from a vigorously growing young shrub and just "on the chance" this was divided up into three parts, potted and covered. All three portions—though not carefully prepared cuttings, with "heels"—grew straight ahead. Soft wood cuttings of vigorous young growth in June or July seem to offer the best chance of increase other than root cuttings.—*A. D., Dorset.*

—— In the issue of the *Gard. Chron.* of July 16, Mr. Treseder inquires about the rooting of Embothrium coccineum, therefore it may be of interest to note that in removing a dead Embothrium stem last year, I noticed one piece of living growth coming from the fork and found it had sent out roots from its base into the few decaying leaves in the fork and these roots had gone down behind the bark and were living on the nutriment and moisture gathered there. It was removed with a piece of the old stem attached and planted; it has grown since, flowered and is now making good growth since the seed pods have been removed. This shows the possibility of roots coming from joints of older wood, and possibly the pieces put in by the gentleman mentioned were broken out at a joint, hence they rooted freely, for one does not find such freedom of rooting from young pieces or even half-ripened shoots, while seedlings are not easily transplanted or rather not very successfully moved from seed pans to separate pots. Possibly it would be better to use larger branches or by partly breaking them out and leaving them for a time—before detaching them—to partly calluse over, before inserting them as cuttings.—*R. W. Norman, Truro.*

Magnolia glauca.—With reference to *A. C. B.'s* article on Magnolia glauca in your issue of July 2, I counted over fifty flowers fully open in our specimen, with double that number showing white in the bud. There were also green buds and immature fruits. The specimen is not above 14 ft. high, but more in diameter, as it is double-stemmed and of compact habit. The fragrance is most delicious when the flowers are fully opened.—*James M. Grant, Grayswood Hill Gardens, Haslemere.*

The R.H.S. Awards.—What does the R.H.S. Awards of Merit stand for? I think the majority of the Fellows would answer that a Committee of experts adjudicate upon new and rare plants, fruits and flowers, and distinguish by Certificates and Awards those which are of exceptional merit; and the inference is drawn that such subjects are worth acquiring by Fellows interested. On Tuesday, July 19, the Floral Committee (Section B), made a number of awards, nearly all to plants which were introduced over a hundred years ago, and consequently can scarcely be called "new." Rare, is a rather indefinite term, but apart from absolute rarity, a flower or plant may be "rare" because it is difficult to grow, not hardy, insufficiently attractive to pay for glass culture, or, for other reasons, not worth cultivation. Certain critics might consider that some of the plants recently distinguished suffered from all these disabilities! Is the Society giving its Fellows a desirable and useful lead in raking up these old subjects and is not the fact that they are little known a proof that they are not worth knowing, excepting, of course, by the botanist.—*Chas. E. Pearson, V.M.H., F.L.S.*

The Golden Elders.—In *The Gardeners' Chronicle* of July 9 (p. 29) it is stated, in a note on the Golden Elders, that the common Golden Elder is a variety of our native species, Sambucus nigra. As I pointed out in these pages some years ago, I think more than once, the common Golden Elder is a variety of the Canadian Elder (S. canadensis), and this was quite well known in some Scottish nurseries many years ago. It still appears in most of the standard works on trees and shrubs as a variety of S. nigra, but an examination of the flowers and other parts of the plant will satisfy any observer that this is wrong. Besides agreeing with the Canadian Elder in its floral characters and otherwise, it synchronises with this species in its flowering, which is later than that of the common Elder, and its cushion-shaped inflorescences are different from those of the common Elder, which are quite flat. The number of parts in the flowers of S. nigra is four or five; in S. canadensis it is five or six. *A. D. Richardson, Edinburgh.*

SOCIETIES.

SAFFRON WALDEN HORTICULTURAL.

The exhibition of the Saffron Walden Horticultural Society, held in Lord Braybrooke's park at Audley End, fully maintained the reputation this Society has gained for providing one of the best shows in the Eastern Counties. The entries were even more numerous than last year and the exhibits throughout the show were of a high standard of merit.

Miss Gibson (gr. Mr. G. Barker), of Hill House, Saffron Walden, achieved notable success. She won for the third year in succession the Silver Challenge Cup, presented by Dr. E. A. O. Travers, for a table of eighteeen varieties of Sweet Peas and it became her property; and also the Silver Challenge Cup presented by Messrs. James Vert and Sons, Ltd., for a collection of twelve kinds of vegetables. Miss Gibson also carried off the premier awards for a table of cut Roses, six feet by three feet, and for a decorated table of choice fruits, six feet by three feet.

Mrs. Barker was no less successful than her husband. In the Ladies' Section she won the first prize with a delightful table decoration, and the prize carried with it the holding for the year of a handsome Silver Challenge Cup valued at fifty guineas presented by Lady Elizabeth Babington Smith and her nine children in memory of the late Sir Henry Babington Smith, G.B.E., K.C.B., and the interest he took in this annual show. The winning of this Cup was no small accomplishment and there were no fewer than twenty-one tables and the large marquee in which they were staged was a perfect study in taste and colouring. Mrs. Barker used in her delicate scheme of decoration Francoa ramosa, Heuchera sanguinea, Selaginella, Berberis, tips of Lavender, Clematis and grasses.

In the Amateur Class (Ladies') for table decorations, Mrs. Berryman, of Great Chesterford, came first with a beautiful arrangement of Roses. For a table of Sweet Peas (in which Miss Gibson won the Cup), Mr. H. H. Claydon, of Bishop's Stortford, came second. Mr. Claydon was also second for a table of Roses, and Dr. Turnbull, of Chelmsford, third; and Mr. W. H. Scott, of Saffron Walden, was second, for a collection of vegetables.

Horticulture being the chief industry at Saffron Walden, the trade exhibits were quite a feature of the show. Messrs. James Vert and Sons, Ltd., won the first prize for a trade exhibit with a magnificent collection of fifty varieties of pot fruit trees which covered a space of 100 feet by twelve feet and occupied the whole of the centre of a large marquee; Messrs. Morse Bros., of Melton, Woodbridge, were second and awarded the Society's Gold Medal for a collection of cut Roses; Mr. W. Wells, of Merstham, Surrey, third and Silver Medallist for a choice collection of herbaceous flowers; and Mr. C. Wright, Takeley, Essex, fourth (and Silver Medal) for a fine exhibit of Roses.

The complimentary trade exhibits were again of a high order. Chief among them was a wonderful display of 350 dozen Carnations from Messrs. C. Engelmann, Ltd.; beautiful tables of Roses, Hollyhocks and herbaceous flowers from Messrs. J. Vert and Sons, Ltd.; a fine display of fruit from Mr. H. G. Baker, of Saffron Walden; and a table of well-grown hardy herbaceous flowers from Mr. S. J. Goodliffe, of Bishop's Stortford.

WEST LOTHIAN PANSY AND VIOLA.

The Annual Exhibition of the West Lothian Pansy and Viola Society was held at Linlithgow; the number of entries was smaller than last year while the quality of the flowers was affected by the weather and the lateness of the season.

A special Award of Merit for an artistic display of Pansies was granted to Mr. Charles Cockburn, Pencaitland, and the Challenge Trophy and Medal for the competitor gaining most points in the Pansy and Viola classes were won by Mr. Joseph Paterson, Philipstoun.

Special prizes were awarded as follows:—Best Fancy Pansy, Mr. Stephen McLachlan, Winchburgh; best Viola and best new break of a Show Pansy seedling, Mr. Quentin McFadyen, Carluke; most points in seedling Viola classes, Mr. Hugh McColl, Linlithgow; best vase of Sweet Peas in the Show, Mr. John Robertson; most points in Rose and Sweet Pea classes, Mr. William Addison, Linlithgow.

The principal prizewinners in the open Pansy and Viola classes were:—Messrs. Alex. Cochrane, Senr., Fauldhouse; Mr. Henry Robertson, Kelty; Mr. Jas. Rutherford, Oakly; Mr. Quintin McFadyen; Mr. Stephen McLachlan; Mr. Andrew Tennant; Mr. Whitburn; Mr. John Murray; and Mr. David Donaldson.

Mr. Ernest Pattie, Hopetoun Gardens, excelled in the Rose classes with first prize awards for twenty-four, twelve and six blooms and he also had the best single vases of yellow, red and pink Roses.

ROYAL HORTICULTURAL.

August 3.—The special feature of the fortnightly meeting of this Society, at Vincent Square, was expected to be a show of Plums, Peaches and Early Apples, but this was a very small affair. The chief interest was centred in large collections of herbaceous Phloxes, Gladioli, general border flowers and scented-leaved Cape Pelargoniums. The Floral Committee recommended four Awards of Merit and selected three novelties for trial at Wisley. There were only a few Orchids, but these were of exceptionally high quality. The Committee recommended three Awards of Merit to new varieties.

Orchid Committee.

Present.—Mr. Fred J. Hanbury (in the Chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Sidney W. Flory, Mr. J. E. Shill, Mr. Fred K. Sander, Mr. Charles H. Curtis, Mr. A. McBean, Mr. John C. Cowan, Mr. T. Armstrong, Mr. Reginald G. Thwaites, Mr. E. R. Ashton and Mr. George E. Baldwin (New York), visitor.

Awards of Merit.

Odontioda Leonardo da Vinci (*parentage unknown*).—In this distinct hybrid the flowers are of medium size and especially good substance. The sepals and petals are red-purple, flushed with ruby and margined with rose; there are also a few rose markings on each segment. Lip white, with red purple flecks and a deep yellow disc. Show by J. J. Bolton, Esq. (gr. Mr. S. Lyne), Claygate Lodge, Claygate.

Odontioda majestica (*Oda. Coronation* × *Odm. majesticum*).—A particularly handsome hybrid in which the influence of O. Coronation is very obvious. The spike carried fourteen flowers, each one rounded and of fine substance. The colour is bright, light chocolate red, broken up and margined with rose-tinted pink. Lip pink, with red base and yellow disc. Shown by J. J. Bolton, Esq.

Laelio-Cattleya Profusion var. Alaric.—This differs from many previous varieties of L.-C. Profusion in the paler, creamy blotches on the lip, these usually being yellow. The flowers are of great size; sepals and petals rosy mauve; lip of similar colour at the base, with broad, rich, royal-purple apex with a blotch of cream colour on each side of the column. Shown by Messrs. J. and A. McBean.

Groups.

Several beautiful plants were exhibited by J. J. Bolton, Esq. (gr. Mr. S. Lyne), Claygate Lodge, Claygate. Those were Odontioda Laura, O. Leonardo da Vinci, O. majesticum and O. Valda of brilliant colouring; Odontoglossum eximium var. Rosalind, and O. Serapis, Every plant carried a fine spike of well-developed blooms, the numbers of flowers on a spike varying from eight on Odontioda Laura, to seventeen on Odontoglossum eximium var. Rosalind. These were all fine examples of high cultivation and a Cultural Commendation was awarded.

Messrs. Black and Flory had a capital display consisting of showy plants of Cattleya Lorna var. magnifica, carrying very large white flowers and a purple front to the lip; C. Eleanora and C. E. alba, each represented by several plants; C. Diana, C. Tagus var. Brilliant and the small, but handsome, C. Sybil.

The three Orchids shown by Messrs. J. and A. McBean were Laelio-Cattleya Profusion var. Alaric, carrying five mauve, purple-lipped flowers of wonderful size; L. Profusion with paler mauve sepals and petals and a darker purple lip; and Cattleya Hardyana alba, with five lovely blooms.

A few Orchids were shown by Messrs. Stuart Low and Co., with their Carnations. The principal subjects were Cattleya Aphrodite, C. Dupreana and C. Gatton Ruby.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Lady Beatrix Stanley, Mr. H. R. Darlington, Mr. W. Howe, Mr. J. F. West, Mr. J. B. Riding, Mr. R. Findlay Mr. G. Churcher, Mr. W. B. Gingell, Mr. D. B. Crane, Mrs. Helen Lindsay Smith, Mr. Chas. E. Pearson and Mr. E. R. Janes.

Section B.—Mr. Gerald W. Loder (in the chair), Mr. Jas. Hudson, Mr. G. Reuthe, Mr. F. R. Preston, Mr. Eric Marsden Jones, Mr. Mark Fenwick, Mr. G. Yeld, Mr. Chas. T. Musgrave, Mr. E. A. Bowles, Mr. W. B. Cranfield, Mr. Reginald Cory, Mr. T. Hay, Mr. R. W. Trotter and Mr. L. R. Russell.

Awards of Merit.

Gaultheria hispida.—This is a very uncommon little species of considerable decorative value. It is of stout erect habit and the reddish stems are furnished with stiff, lanceolate, shining leaves which are very lightly toothed. The shoots bore relatively large white fruits, in long clusters, which disclose bright rosy centres. Shown by Mr. G. W. E. Loder, Ardingley, Sussex.

Lathyrus nervosus.—A full account of this plant which is commonly known as "Lord Anson's Blue Pea," appeared in *The Gardeners' Chronicle* of May 7, last, accompanied by an illustration from a plant growing in the Royal Botanic Gardens at Kew. Shown by Mr. T. Hay, Hyde Park, London.

Leptospermum laevigatum.—This is an exceedingly attractive New Zealand shrub. It is of graceful arching habit and bears large quantities of white flowers which are rather larger than in most members of the genus. The small spathulate leaves are covered with a dense silvery tomentum which adds to the shrub's attractions. Shown by Mr. G. W. E. Loder.

Lilium sp. (*taliense ?*) *K.W.* 6,034.—This attractive Lilium which was collected by Capt. Kingdon Ward in his 1924-5 expedition in Tibet, presumably belongs to the Martagon Section. The specimens on show were raised from seeds sown a little more than a year ago and already some spikes have borne so many as eight flowers. The stems and flower stalks are coloured purple. The dark green leaves are exceptionally short, while the flowers have much longer stalks than those of L. Martagon to which they bear a superficial resemblance. The flowers are small for the genus, much recurved, medium pink in colour and freely marked with small deep, carmine or purplish spots. Shown by Lt.-Col. Messel, O.B.E. (gr. Mr. J. Comber), Nymans, Sussex.

For Trial at Wisley.

Two very fine varieties of herbaceous Phlox were selected for trial at Wisley. Light of Codsall, shown by Messrs. Bakers, Ltd., has large salmon coloured flowers, which are paler in the centre. Daily Sketch, shown by Mr. H. J. Jones has large pale pink flowers which have a definite rose-coloured zone. Iceland Poppy Moonbeam, raised and shown by Mrs. Thorneley, The Elms, Munstead, has large flowers of an attractive primrose-yellow shade of colour.

Groups.

A large floor space was well filled by Mr. H. J. Jones with a good selection of the herbaceous Phloxes he grows so well. The chief varieties were Mia Ruys, a large white flower; Attraction, bright purple; Mrs. A. Ellis, rose; Mrs. T. Hay, mauve; Europe, white with a lilac eye; Mrs. Scholten, rich salmon; Dr. Koningshofer, vivid orange scarlet and Royal purple.

A large group arranged by Messrs. Waterer, Sons and Crisp contained goodly stands of Sidalceas, Salvia virgata, Achillea Eupatorium, Gladiolus in variety, herbaceous Phloxes and Delphiniums. In a corner space Mr. H. Hemsley set out a number of his new varieties of Sidalcea. These were of sturdy habit and bore large, well-formed flowers of good, distinct colours.

Messrs. B. Ladhams, Ltd., included some attractive Sidalceas, especially S. Listerii, which has large, fringed, pale pink flowers, in their large exhibit. There were also many Phloxes, Crinums, Lobelia Tupa, Coreopsis and Lavatera Olbia rosea.

On a floor space Messrs. M. Prichard and Sons grouped Crinum Krelagei, a new pink variety, Poterium obtusatum, Crinum Powellii, Agapanthus Mooreanus pallidus, Lysimachia clethroides, various Tritomas, Campanulas and Carnation Ruby Castle. Adjoining this exhibit Messrs. Bakers, Ltd., set out especially well-grown plants of various Astilbes. The new varieties included Hannah, a robust, deep pink spike; Granat, deep rose; Freda, medium pink; and Gunther, pale pink, of the erect-flowered type, with some attractive simplicifolia hybrids. Messrs. J. Cheal and Sons showed herbaceous Phloxes, Pentstemon County Oak, of rich red colour, Lupins and Erigerons. The Misses Hopkins had a small rock garden of hardy flowers.

An imposing group of Campanula pyramidalis, both blue and white forms, from the Mental Hospital, Napsbury, St. Albans (gr. Mr. W. J. Jennings), contained many exceptionally well-flowered plants. In a corner space by the gallery Messrs. L. R. Russell, Ltd., displayed Erythrina Crista-galli, some Clematis, Nandina domestica, Lilium Henryi and other plants.

Messrs. B. R. Cant and Sons showed a good collection of Roses including Mrs. C. van Rossem, velvety crimson; Madame Butterfly, Betty Uprichard, Hoosier Beauty and Mrs. Henry Moore.

Carnations of good quality staged by Messrs. C. Engelmann, Ltd., included Lady Hindlip, Orange Sunstar, Sheila Greer, Nero and several other fancy varieties. Messrs. Stuart Low and Co., Ltd., had good vases of Carnations and Roses with their Orchids.

Gladioli were extensively shown by Messrs. J. Kelway and Son. Their large-flowered varieties included Summer Glory, salmon; Letitia, puce and rose; Albert, crimson; Superb, deep salmon; Orby, deep pink; and W. L. Reeves, rich crimson. The many Primulinus hybrids included George Gordon, Lieut. Kelway, Scarlet Banner and L'Innocence.

Messrs. H. Langridge and Co. had a tall exhibit of Gladioli. Amongst the large-flowered varieties were Rubin, scarlet; Merlust and Wilbrink, lilac blush. The chief Primulinus hybrids were Psyche, Maiden's Blush and Jan Steer. Messrs. R. and G. Cuthbert showed many Primulinus hybrids. The chief were Maiden's Blush, pale salmon; Venusta, deep pink; Tanessa, salmon; Hermoine, orange salmon; Souvenir, yellow; and Salmonee, bright salmon.

The Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree, contributed a large collection of scented-leaved Cape Pelargoniums. In addition to the usual types there were P. artemesifolium, P. abrotanifolium, P. saxifragioides and P. crithmifolium with most distinct types of foliage.

Fruit Committee.

Present.—Mr. C. G. A. Nix (in the chair). Mr. H. S. Rivers, Mr. H. V. Taylor, Mr. W. H, Divers, Mr. E. A. Bunyard, Mr. T. Pateman, Mr. E. Neal, Mr. A. Poupart, Mr. Edwin Beckett, and Mr. J. Cheal.

Competitive Classes.

The show of Peaches, Nectarines and other fruits was somewhat disappointing. The exhibits, though of good quality generally, were few. There was no exhibit of a collection of Peaches and/or Nectarines, but the two collections of general hardy fruits were of considerable merit.

There were only two exhibits of three dishes of Peaches and the first prize was awarded to Mr. E. G. HUNT, Middlebridge House, Fremington, Devon, who had excellent dishes of Royal George, Peregrine and Crimson Galande. The second prize was withheld and the third awarded to F. C. STOOP, Esq. (gr. Mr. J. Carpenter), West Hall, Byfleet. The only single dish of Peaches was shown by LADY JULIET DUFF (gr. Mr. H. Weaver), Coombe Court, Kingston Hill, and this contained six excellent fruits of Royal George.

F. C. STOOP, Esq., was awarded the first prize for three very good dishes of Nectarines. He included Pine Apple and Milton. Showing splendid fruits of Pine Apple and Nectarines, Mr. E. G. HUNT was awarded the first prize for a dish of that fruit, and LADY JULIET DUFF was second.

F. C. STOOP, Esq., was alone in the class for four dishes of Plums, and was awarded the first prize for dishes of Czar, Early Orleans, de Montfort and Pershore Yellow. Oullin's Gage, shown by Mr. E. G. HUNT, was the best single dish of dessert Plums, and the variety Czar, from the same exhibitor, was the best cooking variety.

The best sweet Cherry was Florence, shown by Sir CHARLES NALL-CAIN, Bt. (gr. Mr. T. Pateman), Brocket Hall, Hatfield, and F. C. STOOP, Esq., was second with Archduke. The best one dish of any sour Cherry was a good dish of Morello shown by Mr. A. H. PULLIN, Arthog, Wallington, Lincs., Mr. J. E. ANSTEL, Rose Cottage, Sutton, was first with Loganberries and Apples, Red Quarrenden, Keswick Codlin, and Rev. W. Wilks, while Mr. A. H. PULLIN was equally successful with a good dish of Irish Peach. The best dish of Gladstone Apple was shown by Mr. J. GRAVETT, Tonbridge. The first prize for six early Apples was won by Mr. J. A. STIDSTON, Bishopsteign, Devon, who had shapely fruits of Beauty of Bath, Stirling Castle, Langley Pippin and Rev. W. Wilks.

In his very meritorious first prize exhibit of a collection of fruit, Sir CHARLES NALL-CAIN, Bt., included Nectarine, Early Rivers, Peach, Duke of York, and White Heart, Florence and Late Black Bigarreau Cherries,. F. C. STOOP, Esq., was second and he had good dishes of Nectarine, Milton and Pine Apple, and Peaches.

Mr. J. J. KETTLE staged, not for competition, fruiting sprays of Raspberry, Lloyd George, a seedling and Rubus phoenicolasius.

ROYAL SCOTTISH ARBORICULTURAL.

A GENERAL meeting of this Society, held in the showyard of the Highland and Agricultural Society's annual exhibition at Edinburgh, was decidedly heartening to all concerned in Scottish forestry. True, there were pointed out sins of omission and sins of commission, but throughout all the proceedings there rang the clear note of progress. Sir Hugh Shaw-Stewart, Bt., of Ardgowan presided, supported by Lord Clinton, the new chairman of the Forestry Commission.

Professor A. W. Borthwick, O.B.E., of the Chair of Botany in Aberdeen University, opened the business by giving a delightful description of the forestry exhibits displayed in the Society's department in the showyard. Although not so numerous as he would have liked, the exhibits were undoubtedly up to a very high standard, and the quality was of an outstanding nature. They had specimens of hard woods and soft woods, showing what could be done in the way of growing timber in Scotland. The exhibits forwarded by Mr. Spiers, an enthusiastic woodman, showing Beech and Black Italian Poplar, were of great importance, illustrating as they did the value of paying more attention to such useful, rapid-growing timber as Poplar. The peat exhibits from Palace Rigg, Glasgow, showed many useful purposes to which peat could be put. This industry was in its infancy yet, and they hoped it would continue to grow. Another instructive exhibit showed what progress was being made as regards the utilisation of peat areas for the growth of timber. The two entries were side by side and the one was complementary to the other.

Mr. John Maclaren, factor to the Earl of Home, at Douglas Park, reported on the judging of nurseries and plantations. He lamented the entries were not larger, and felt it showed a lack of interest on the part of many proprietors.

Mr. Charles Buchanan reported on the Society's excursion to Belgium, and the many object lessons and interesting things to be seen there. Belgium, he declared, had probably the most flourishing young plantations in the world. There were 1,500,000 acres under woodlands—seventeen per cent. of the whole area of the country. It was a great example and object lesson to both Scotsmen and Englishmen to see what could be done in a small country like Belgium.

Two suggestions were put forward for the next one-day excursion by the members—one to Inverness-shire, finishing up with the afforestation area of the Culbin Sands, Morayshire, and the other to the Holkham area in Norfolk. The matter was remitted to the Council to make a decision.

The Chairman then reminded the meeting that they had with them that day Lord Clinton, the new chairman of the Forestry Commission. They were all extremely happy to have an opportunity of giving him a warm welcome at the commencement of his very important and, he had no doubt, very difficult duties. Naturally at this time their thoughts reverted to the first Chairman, Lord Lovat, but he felt sure Lord Lovat's mantle could descend on no better individual than Lord Clinton, who was one of the original Forestry Commissioners. Lord Clinton, besides his own long and intimate connection with arboricultural subjects, had a double advantage in that he could speak as a representative both of Scotland and England, because for many years he lived at Fettescairn (Kincardineshire) and managed his own estate there, but when he succeeded his father he had to live down in Devonshire.

Lord Clinton, acknowledging the kindly welcome given to him, paid a high tribute to his predecessor, Lord Lovat. No man, he declared, had done more for forestry in Scotland than Lord Lovat did, and while he had now taken up a position of very great national importance in charge of Overseas Settlements, he (Lord Clinton) thought Lord Lovat's first love was forestry, and would continue such. Reminding his hearers that he personally had been a member of the Royal Scottish Arboricultural Society for more than forty years, he declared that the *Transactions* of the Society inspired one with enthusiasm in forestry. The Society had done enormous service to private forestry. Although one had now a great deal to do with the State side of forestry, they must not forget that it was private forestry alone that had kept a respectable area planted, and they were now able to build upon what had been done in the past. The future of private forestry was extraordinarily difficult at the moment; but he was gratified to know and to see that many people were still able, in spite of the most adverse circumstances, to carry on, and while he was willing to admit that the assistance which private forestry received from the State was of a somewhat meagre nature, yet it was an acknowledgment on the part of the State that it had still someone to depend upon in the private individual. They knew, of course, that apart from any grant that might be given by the Government, they had some definite, certain, although not very great, advantage as regards taxation.

The following were the principal awards announced:—

Young plantations, not exceeding ten years of age, on estates having less than 300 acres of woods—LORD POLWARTH (No. 2 Silver Medal).

Plantations between ten and twenty years—LORD ELPHINSTONE, Carbery Towers (No. 1 Silver Medal).

Plantations between ten and twenty years, on estates with over 300 acres of woods—THE EARL OF BALFOUR (No. 1 Silver Medal).

Plantations between twenty and forty years—THE DUKE OF BUCCLEUCH, Dalkeith (No. 1 Silver Medal).

IPSWICH AND DISTRICT GARDENERS'.

ON Wednesday, July 20, a large party of members travelled by charabanc to Sandringham when a visit was paid to the Royal Gardens. On arrival the party was met by Mr. J. H. Cook, gardener to His Majesty, who acted as guide through the fine ranges of glass houses where splendid displays of Carnations, Cypripediums, and stove plants were to be seen. Peaches, Nectarines, Figs and Grapes were all in a high state of perfection. The extensive kitchen gardens, and the fine herbaceous borders greatly impressed the visitors.

The grounds round York House and Sandringham House and the church were all visited.

WATFORD HORTICULTURAL.

THIS Society held its first annual show on July 26 and 27, in Cassiobury Park, and the officials are to be congratulated on the success of their first effort. Five large tents were required to stage the 202 classes that were provided in the Schedule. Trade Groups were numerous and of a high standard, while in the amateurs' classes, vegetables and hardy fruits were of very high quality, but Grapes and other indoor fruits were not so well shown.

The Mayor of Watford presided at the opening proceedings and Viscount Hampden declared the Show open.

Silver Gilt Medals were awarded to the Messrs. C. ENGELMANN, LTD., and to Messrs. ALLWOOD BROS. for Carnations; to Messrs. L. RUSSELL, Messrs. DANIELS BROS., Messrs. DICKSON, Messrs. WM. CUTBUSH AND SON and Messrs. R. AND G. CUTHBERT for miscellaneous groups, and to Messrs. SCRIVENER AND SONS for a floral display.

Silver Medals were awarded to Mr. H. J. JONES for Phloxes, and to Mr. KLINKERT and to Messrs. KIRKWICK, Harpenden.

The schedule provided two open classes, one for eighteen varieties of Roses, distinct, not more than twelve blooms in each vase. The first prize was easily won by Messrs. R. HARKNESS AND CO., Hitchin; Messrs. CHAPLIN BROS., being second. In the other class for a group of fruits arranged on a space of 200 square feet, Messrs. T. RIVERS AND SON, Sawbridgeworth, led with a splendid exhibit of fruit trees in pots which included excellent Peaches, Cherres and Plums. This exhibit carried with it the Watford Horticultural Society's Cup; Messrs. LANE AND SON were awarded the second prize.

For a group of pot fruit trees arranged on a space not exceeding 200 square feet, the first prize, including the Pierpoint Morgan Challenge Cup, was awarded to the donor, whose gardener, Mr. F. A. STEWARD, made a very fair display. The same competitor won the Challenge Cup for a group of flowering and foliage plants.

Vegetables in the open class were of a very high quality, the first prize being won by S. WALLBROOK, Esq. (gr. W. H. Holloway), The Croft, Stanmore.

For a collection of fruits, space unlimited, the first prize was won by Mrs. C. L. BOURNE (gr. Mr. E. Baker), Garston Manor, who led with a display that contained excellent Strawberries, Gooseberries, Cherries and other small fruits. For a group of flowering plants (open to amateurs not employing more than two gardeners), the most successful competitor was Mr. R. ASHBY, Watford, whose exhibit was awarded the Scrivener Challenge Cup.

Roses and Sweet Peas were well shown in the cut flower section, while in the vegetable classes, Potatos and Carrots were exceptionally good in each division.

Table decorations were tastefully arranged, the first prize being awarded to Mrs. VEITCH, Watford, while the first prize for a bowl of flowers was won by Mrs. CARPENTER, King's Langley.

ANSWERS TO CORRESPONDENTS.

Ampelopsis Veitchii Dying.—*C. J. W.* It is not unusual for plants of Ampelopsis Veitchii to die in the manner described. It is not a long-lived plant, and the fact that it is usually increased by cuttings tends to reduce the length of life. Very often plants die suddenly after a period of exceptional vigour, and no good reason has been advanced for it, except that the species is naturally not very long-lived. On the other hand, plants sometimes live many years, presumably when conditions prove to be very satisfactory.

Antirrhinums Diseased.—*A. H. B.* The Antirrhinums appear to be suffering from an attack of the fungus Cercosporella. This is most abundant in damp weather when it is apt to spread quickly. If the plants are not too badly attacked the fungus may be checked by spraying both healthy and diseased specimens with Bordeaux mixture.

Culinary Peas Unsatisfactory.—*W. G.* The sickly appearance of your plants is due to the rotting of the roots by the fungus Thielavia basicola. This disease is likely to prove worse under conditions of bad drainage or over-watering. We would advise you not to plant Peas in the same place next year.

Carnations and Cyclamens Failing.—*R. N. S.* Your Carnation plant is suffering from Fusarium " die back." Fusarium is a fungus common to quite a number of soils, and this particular one has been found in dirty water supplies, such as those drawn from shallow brooks, ponds or streams. The fungus infects the snag which is left when the flowers are cut away. Usually the " die-back " does not go very far down the plant but is stopped by the first healthy side shoot. If, however, the mass of foliage is very dense and the houses are too wet and too hot, infection is not stopped by a lateral, but gradually destroys the plant. The remedy is to keep the atmosphere dry, give more ventilation and reduce the temperature. Your Cyclamen is not attacked by Eel-worm. It is infected by the fungus Thielavia, which causes a kind of corm-rot. This disease is most common when the soil is too wet and too close in texture. A light dressing of hydrated lime may help you to control it, but, in future, you would be well advised to propagate the Cyclamens in soil sterilised either by heat or with formaldehyde.

Grapes Spotted.—*M. L.* So far as we have evidence there is no serious fungus trouble affecting your vine, although a little Cladosporium was present on the minute scab-like marks on the fruit. It is quite possible that the water used for syringing at an earlier period may have something to do with the trouble. We suggest the vine be left in position and examined carefully next year; if similar spots appear, we shall be glad to examine further specimens. *A. G., W. F. and A. B. C.* The berries are affected with spot disease, caused by the fungus Gloeosporium ampelophagum. Dust the leaves and bunches with flowers of sulphur at intervals of ten days, or spray with liver of sulphur at a strength of half-an-ounce in two gallons of water. Next winter, when the vines are dormant, spray the rods with iron sulphate in solution.

Names of Plants.—*D. H.* The Rose was too faded to be recognisable, but in any case we cannot undertake to name florists' flowers. We suggest that you send a young flower to the nurseryman from whom you obtained your plants, who will, no doubt, name the variety for you.—*H. G. M.* 1, Helichrysum frigidum; 2, Veronica spicata; 3, Phlomis fruticosa; 4, Cotoneaster Hookeri; 5, not recognised; 6, Cotoneaster Simonsii; 7, Berberis vulgaris; 8. Corydalis lutea.—*J. J.* Iris (siberica) orientalis Blue King, introduced from Japan in 1902.—*J. H. M.* Purple flower: Lycium barbarum; white flower: Prunus lusitanica.—*A. K. T.* Lonicera Ledebourii.—*A. E. C.* 1, Escallonia macrantha; 2, Spiraea Bumalda var. Anthony Waterer; 3, Lychnis chalcedonia; 4, Veronica; species not recognised. We do not undertake to name Roses. *H. T.* Acer Pseudoplatanus (Common Sycamore). *A. G. D.* 1, Corydalis lutea; 2, C. capnoides. *J. C. & C.* 1, Lychnis Viscaria; 2, Silene pendula flore-pleno.

Peach Hale's Early.—*H. W.* The cultural details under which your Peaches are grown in a cold house are all that can be desired. The sunless season may have had a great deal to do with the poor flavour of your fruits of Hales's Early. This is a highly-coloured Peach of fair flavour if eaten direct from the tree, but if kept long it soon becomes mealy and tasteless. Give the root area of the tree a dressing of slaked lime in the autumn, and a dressing of sulphate of potash in the winter with slight sprinklings of potash manures during the growing season in preference to any nitrogenous manures; this treatment should improve the quality of your fruits.

Pot Pourri.—*G. H.* Take the rind of two Lemons (cut thinly), one pound of bay salt, one ounce of powdered Orris root, one ounce of Gum benzoin, one ounce of Cinnamon, half an ounce of Cloves, one ounce of Nutmegs, one grain of Musk, twelve Bay leaves, a few Sage leaves, Rosemary and Lavender, cut small, one ounce of Lavender water, one ounce of eau de Cologne, and one ounce of Bergamot. Mix all together in a pan, and add Rose petals in the natural state as they come into blossom. Stir frequently; at least once a day. Put into a covered stoneware pot and use a wooden spoon to stir with. At the end of two months, the mass may be placed in Japanese Rose jars. From time to time throw in fresh Rose leaves.

Rust on Vine Leaves.—*J. D. C.* The brown fungous growth on your vine leaves is a species of Cladosporium which seems to be growing saprophytically upon some compound on the leaf surface. A similar growth frequently follows an attack of White Fly, but we could find no sign of this pest on the leaves.

Tomato Leaves.—*Newent.* The thickening and curling of your Tomato leaves is caused by the richness of the soil and the low temperature. You should apply sulphate of potash at the rate of five cwts. per acre and be more sparing with water.

Vine Leaves Discoloured.—*S. H. L.* The vine leaves are not themselves attacked by any fungous disease and the rusty-brown colouring they show may be due to a variety of causes. We are inclined to believe that there has been some error in regard to watering and ventilating. The box in which you sent the specimens was damaged and we found no Begonia leaves, but judging from your description we believe they are suffering from an attack of thrips or Begonia mite.

Weed Amongst Pasture Grass.—*M. L.* The weed is Crepis virens of Linnaeus, though some critical botanists say it is more correctly named C. capillaris of Walbroth. It is only an annual, but quite capable of holding its own in grass, and in flowering and seeding at any height from three inches to three feet. It grows in any kind of soil except wet peat, and conforms to rich soils and rank grass up to the height stated. If cut over to prevent it from seeding it will grow up again and flower though only three inches to twelve inches high, according to whether the pasture is poor or eaten down close or otherwise. It occurs in every county of Britain, even to the Shetland Islands. From this you may conclude that it is indifferent to the constituents of any kind of pasture land, except peat, where it would only grow where the peat is shallow and dry. It ascends the hills or mountains to 1,000 feet. Doubtless your pasture could be improved by a dressing of basic slag in the autumn. This manure encourages the growth of grass and Clover.

Weed on a Lawn.—*J. G.* The weed is Sysimbrium officinale (Hedge Mustard). The roots were sixteen inches long, so they must have been tough. The long tap-root is usually stouter, but as the plant is only an annual, little or nothing will be seen of it after the lawn has been mown a few times, provided the grass covers the ground.

Yew Hedge Dying.—*J. S. H.* The dying of portions of a Yew hedge may generally be attributed to dryness at the roots or insufficient nourishment, and often to both causes. If the surface soil has become hard, it should be broken shallowly, and a copious watering given. It would then be advantageous to apply a top-dressing of such materials as road soil (provided the motor traffic is not very heavy), old potting soil or garden soil, with the addition of a small proportion of well-decayed farmyard manure or leaf-mould. But the manure content must be small, because Conifers and allied trees are adversely affected by applications of manure of a strength which would benefit broad-leaved trees.

Communications Received.—A. S.—J. R. B.—F. P.—A. B. H.—W. E. G.—F. K.—W. F. and Co.—J. C.—J. M.—G. P.—J. C.—S. A.—W. R. P.—R. F. S.—G. W. S.—W. C.—E. N. W.—M. F. B.

NEW HORTICULTURAL INVENTIONS.

These particulars of New Patents of interest to readers, have been selected from the Official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

Latest Patent Applications.

17,766.—Associated Oil Co.—Insecticides, and production of same. July 4.

17,800.—Chinn, D.—Device for supporting plants, etc. July 5.

17,920.—Goakes, A.—Harrows. July 6.

18,270.—King, W.C.—Collapsible fences. July 9.

17,770.—Morgan, W. S.—Wheelbarrow wheel. July 5.

Specifications Published.

273,350.—Ness, A.—Collapsible barrels and the like.

273,416.—Linaker, C. E.—Means for forming disinfecting and other solutions and for discharging them under pressure.

273,427.—Hardwicke, S. M. B.—Combination tool for bee-keepers.

254,305.—Frova, G.—Machines for removing stones, cores, and stalks from fruit.

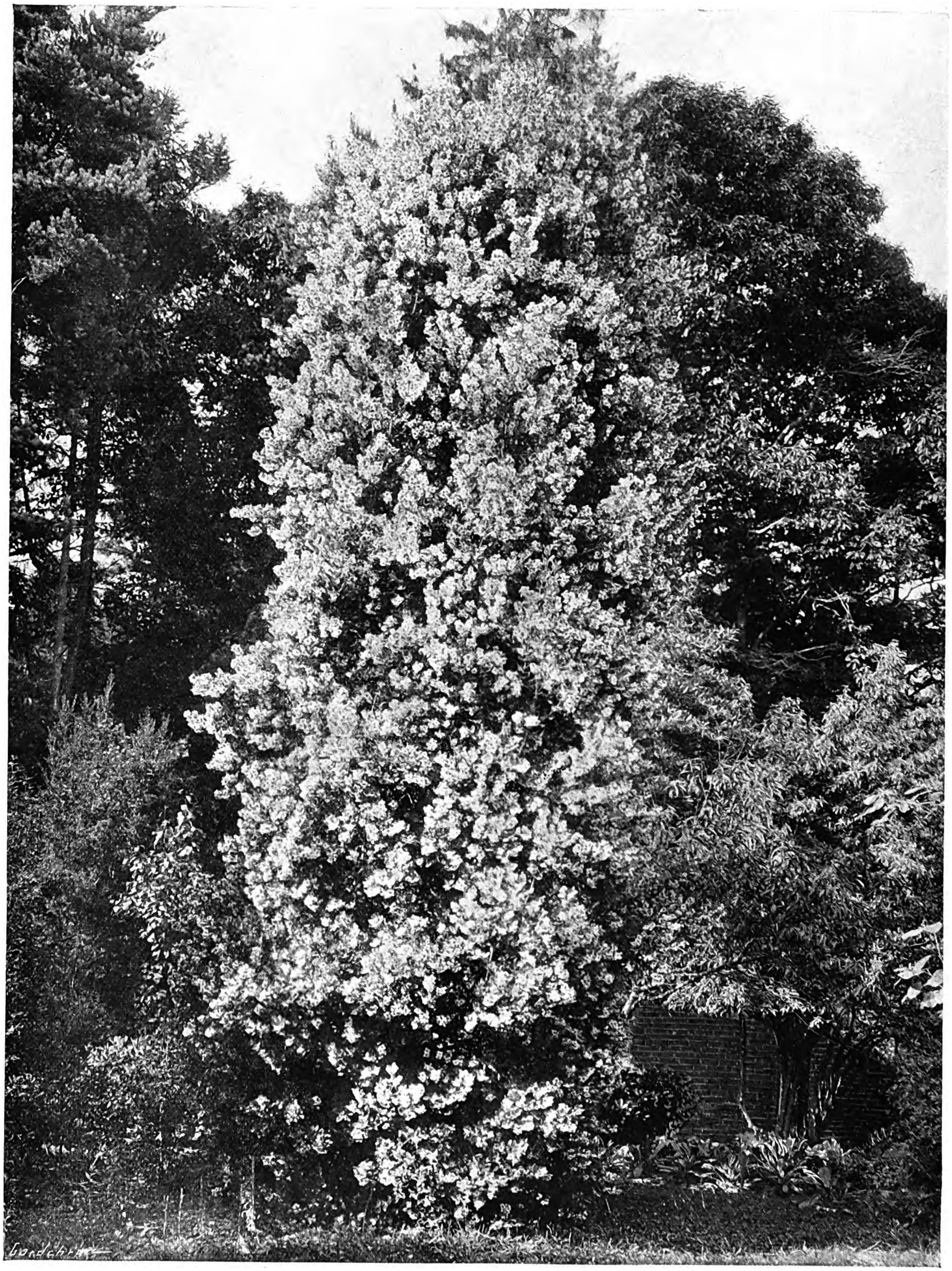
268,744.—Boehringer and Soehne, Ges., C. F.—Manure and process for its preparation.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1/- each.

Abstract Published.

271,480.—Fungicides; colloidal elements and compounds.—I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Fungicides to be used wet or dry for treating seeds, for impregnating wood, or for the treatment of plant diseases contain organic complex mercury compounds soluble in alkali and copper compounds soluble in alkali. A salt or an inert material may be used as a diluent, a wetting agent or another fungicide may be added, and the preparation may be put up in tablet form. According to examples sodium mercury cresol, anhydrous copper sulphate, anhydrous sodium potassium tartrate, and caustic soda are mixed together; and sodium mercury cresol is mixed with a colloidal copper preparation made by oxidising sulphite cellulose lye with potassium bichromate, adding copper sulphate, neutralizing with caustic soda lye, and evaporating to dryness.

Supplement to the GARDENERS' CHRONICLE. Aug. 13. 1927



EUCRYPHIA CORDIFOLIA AT NYMANS, HANDCROSS.

THE Gardeners' Chronicle

No. 2120.—*SATURDAY, AUGUST* 13, 1927.

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SUPPLEMENT PLATE.
Eucryphia cordifolia.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 61·9°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 10, 10 a.m. Bar. 29·9. Temp. 60°. Weather, Cloudy.

The Hardy Fruit Crops. THE returns furnished by our correspondents from all parts of the country, and summarised on p. 131-137, show that the fruit crops are poor, but not so bad as it was feared they would be earlier in the season. It is many years since this country experienced frosts of such severity as those that occurred at the end of April and the beginning of May, when fruit trees and bushes were either in flower or had just formed their tender, embryo fruits. Up to that time the prospects were splendid; the winter had been mild generally, the weather of the previous autumn had favoured the ripening of the wood and development of fruit buds, and growers everywhere looked forward to a bountiful yield. Then, when orchards and gardens were white with blossom, the temperature dropped to below freezing point, and in some places so much as 10° of frost was registered. Fears were entertained that the whole of the fruit crops everywhere had been ruined, yet the surprising thing is that much of it escaped, and it is the more remarkable in view of the great damage done to other vegetation of a reputedly hardy nature. Circumstances which may have contributed to some of the blossom setting were the "strength" of the individual flowers, the relatively dry atmosphere at the time of the frost, and protection from prevailing winds. The damage was greatest in low-lying districts, where the air is always denser and moister than in sites that are elevated; crops near the ground, such as Strawberries, felt the full effects of the frost, and their early trusses were blackened and ruined. Northern growers appear to have the worst crops, which is not, perhaps, surprising; the returns from Scotland are especially low, for in nearly every case the yields are given as under the average, which may even mean no crops at all. The cold, north-east winds, which prevailed after the frosts were over, completed the ruin, and the weather was sunless and cold until well into June, and it continued cold and wet when Strawberries and other soft fruits were ripening, with the result that the berries lacked flavour and the quality was poor. Among the more interesting facts recorded by our contributors is the behaviour of certain varieties of Apples in different districts. Some report that the varieties Bramley's Seedling and Court Pendu Plat are cropping splendidly, others that these sorts are amongst the worst failures. Why such a vigorous variety as Bramley's Seedling should be so generally a failure in gardens where other sorts are cropping well is difficult to understand, and no one has offered an explanation. It may be that the flowering of this particular Apple synchronised with the frost, whilst the blossom of others was either over or not yet expanded. The fact that frost came so late in the spring is doubtless the reason why the "Wise Apple"—by which name Court Pendu Plat is frequently known—is included by many amongst the barren sorts, while other late bloomers, such as Crawley Beauty, suffered the same fate. This points to the need, especially in private establishments, of growing a fairly wide selection of varieties, of which some are early and some late in flowering, so that if one is damaged by frost the other may escape. The most striking case of precocious fruits escaping damage this season is found in the comparatively good yield of Peaches in England, of which crop sixty growers report average yields and fourteen crops in excess of the average, out of a total of 129 returns. The most gratifying of all is the Apple crop—our most important fruit. It is certainly not too good, but with 111 of our correspondents reporting yields equal to or over the average and only fifty-nine under the average, the early fears of a total failure of the Apple crop have been dispelled. There are compensations, too, for Apples, generally, are of splendid quality and of large size. The trees also appear to be very healthy, although we have noticed a good deal of American Blight in some places. Motoring through south-east Kent during the past week, we were impressed with the excellent crops in the Apple orchards and plantations, and in many parts we saw good crops of Plums and Pears. The latter fruit, however, will be amongst the scarcest of all, as a glance at the summaries on p. 137 will show, the number of returns "under" the average being the largest of all. Plums are but little better, yet we have seen Plum trees this season in Kent and Essex literally breaking down with a superabundant crop. The yield is especially good where the trees were shaded from the early morning sun, and we were not surprised to hear the misinformed state that the damage was done entirely by the sun and not the frost, which is akin to the belief that the thaw and not the frost is responsible for burst water-pipes. Cherries have given by far the best crop among stone fruits, but much of the Sweet Cherry crop was spoiled by the excessive rains when the fruits were ripening. Peaches, as already stated, are fairly satisfactory in regard to yield, but Apricots are deficient in numbers. Small fruits rarely default, and whether other fruits are plentiful or scarce, our records over long years of evil and of good reports prove that we may depend on Gooseberries, Currants, Raspberries and the others grouped in the category of "small fruits," to give their full share of the fruit harvest—and the present season is no exception. The fears that the frost had destroyed much of the Gooseberry crop were apparently groundless, for we have seen Gooseberry bushes bearing big crops of fine berries in many parts of the country, although we regret to record cases of bad defoliation of the bushes by the Gooseberry Caterpillar. Nuts are not cultivated so generally as the other fruits, but they form an important crop in some gardens, and add variety to the dessert. The yield this year is considerably under the average, only two correspondents reporting an over crop.

Famous Botanists and Plants named after them.—A collection of some two-dozen portraits of famous botanists, with specimens of living plants that have been named after them, has been arranged in Museum No. 3, near the Main Gate, at the Royal Botanic Gardens, Kew. Among the plants—which include rock garden plants and trees—Linnaea, Lobelias, Dahlias and Fuchsias are included. The Dahlia received its name in honour of the Swedish Professor, Andreas Dahl, a pupil of Linnaeus, and the Fuchsia in honour of Leonard Fuchs, a well-known physician and botanist of the sixteenth century and author of the famous Herbal. Lobelia commemorates the name of Matthias de l'Obel, botanist to James I and physician to William Prince of Orange. Heuchera (Alum root) takes its name from Johan von Heucher, a German botanist, and the tropical Bougainvillea from Louis de Bougainville, a French military commander, who served under Montcalm in the American War. Among famous British botanists, after whom plants have been given their generic names, portraits are exhibited of Charles Darwin, Sir Joseph Banks, the Rev. Stephen Hales, Archibald Menzies and Alan Cunningham, Kew collectors, and others.

Male Irish Yew.—The current issue of the *Kew Bulletin* (No. 6, 1927) contains an interesting account of the discovery of the male form of the Irish Yew. Ever since Mr. Willis found the Irish Yew in the mountains of Fermanagh in 1780, this fastigiate variety has been known only as a female form, and propagation has been effected by cuttings; indeed, it is probable that all the plants now in cultivation have descended from one of the plants found in Fermanagh—the one planted in the Earl of Enniskillen's garden at Florence Court. The male plants referred to were discovered recently by Mr. W. H. B. Fletcher, of Aldwick Manor, Bognor, who wrote:—"I was going along a footpath leading to the graveyard at North Mundham, a parish between Bognor and Chichester, which is bounded by high hedges, perhaps some ten feet high, in which are some variegated Irish Yews. I gave two of these a tap with my walking stick and was surprised to see a cloud of pollen drift off. These hedges were planted for my late brother, who was Vicar of the parish from 1882-1926, so I suspected whence he got the Yews. In the course of a day or two, it occurred to me to have a look round the Irish Yews in my own shrubbery and there I found three male bushes of the green form and one of the variegated, all about ten feet in height, as well as smaller bushes of the variegated form. My own bushes came from the Barnham Nurseries, Ltd., Barnham, near Bognor, in the planting season 1900-01. No doubt the others came from the same place." As, however, there seems to be no record regarding the stock whence the male plants came, there appears to be little chance of ascertaining the origin of these male Irish Yews. It is of interest to observe that male flowers of the Irish Yew were found on a previous occasion, for the late Dr. M. T. Masters stated in *The*

Gardeners' Chronicle of July 18, 1891, page 68, that he had received sprays of an Irish Yew from Mr. Tillett of Sprowston, near Norwich, bearing "unequivocal male flowers," but whether these sprays were sports on a female plant or from an entirely male specimen was not stated.

Pershore Flower Show.—The forty-seventh annual flower show, held at Pershore, took place on August Bank Holiday, when no fewer than 6,000 people paid for admission. An old English fair was associated with the function, and there were numerous sports competitions. The occasion was of special interest inasmuch as this year coincides with the centenary of the famous Pershore Egg Plum. Mrs. E. V. Butler, Miss M. Huntington, Mr. C. A. Mumford, Mr. S. G. Parkes, Dr. H. M. Savery, Mr. Duncan Gibbs and Mr. E. J. Palfrey were the most successful competitors, the last-named winning a special trophy for the highest number of points in the vegetable classes. There were numerous classes for Plums, and the competition throughout was particularly good, as one would expect in the case of growers in the Vale of Evesham.

Protection of Stonehenge.—Public appeal is being made for the sum of £35,000 for the purchase of land on Salisbury Plain so that the surroundings of this ancient stone circle may be preserved for all time. At present there is a possibility that many of the immediate surroundings of Stonehenge may be utilised for the building of hotels and restaurants, and there is a fear that unless the land can be purchased and placed under the guardianship of the National Trust, it will eventually be studded with all the accessories of a popular holiday resort. The total area of land under consideration is 1,444 acres, and £35,000 is a small amount to secure the preservation of the surroundings of these famous archaeological remains.

Generous Gift to Elgin.—A generous donor, who wishes to remain anonymous, has offered to Elgin Town Council the sum of £1,000 for the purpose of laying out flower beds in the Cooper Public Park. This fine stretch of woodland and meadow was a gift to the City of Elgin some years ago by a gentleman whose name it bears, but its many attractions do not include floral decorations of any kind. This will now be remedied, the intention being to start cutting out beds in which Hyacinths, Tulips and other bulbs will be planted, thus ensuring a fine display next spring. The intention is to provide a seasonal succession of flowers through most of the year. The work has been entrusted to Mr. Thomas L. Mann, who has done excellent work for horticulture in and around the City of Elgin. The proposal is to spend £200 a year for the next five years. Long before the expiry of the period named, the citizens of Elgin will be able to appreciate to the full what they owe to the anonymous donor, as it is intended to have the different plants named, thus serving educational as well as spectacular ends.

Professor Erwin Barth.—Those who have seen and admired the beautifully planned and well-kept gardens and open spaces of Berlin will learn with interest that Herr Erwin Barth, the town's Garden Director, has been appointed Professor at the Technical High School in Charlottenburg. Herr Barth is already teaching at the school, having been placed on the staff in 1921, when horticulture was definitely added as a permanent subject to the curriculum. His nomination as Professor does honour, not only to him, but also to horticulture in general, as it marks a definite advance in the status of the craft. We are sure Herr Barth's friends will heartily congratulate him on this tribute to his devoted and successful labours.

Silver Medal for Agricultural Research.—The Royal Agricultural Society is offering a Silver Medal for a monograph or essay, giving evidence of original research, on any agricultural subject, on any of the cognate agricultural sciences, or on agricultural economics. Competitors must reside in Great Britain or Ireland, and be not more than thirty years of age on September 29 of the present year. The monograph or essay must reach the Secretary of the Royal Agricultural Society on or before October 31.

Plant Protection Conference.—The second International Conference for Plant Protection will be held early in November, 1928, at Rome, and will coincide with the Ninth Assembly of the International Institute of Agriculture. The first Conference was held at Rome in February and March, 1914.

M. H. van Orshoven.—An old friend and correspondent of *The Gardeners' Chronicle*, M. H. van Orshoven, the Director of the Horticultural Department of the Belgian Ministry of Agriculture, is well-known to many British horticulturists, and almost as well-known to French horticulturists as to those of his own nationality. He was born at the little hilly town of Hoeylaert, so well-known as the centre of the Belgian Grape-growing district. Here his father was at one time President of the Grape Growers' Association, an office subsequently held by his father-in-law. M. van Orshoven, senior, was also President of the Brussels Co-operative Horticultural Auction Market, consequently the son, the subject of this notice, was brought up in the midst of active commercial horticultural interests. After his school days he took his Agricultural Degree at the University of Louvain, and later on graduated at the State Horticultural School at Vilvorde. He then came to England, where he studied horticultural methods and horticultural institutions before going to Holland, Germany and France for a similar purpose. Having thus gained very considerable experience and a wide knowledge of horticultural methods in several countries, he returned to Belgium and was at once given charge of the Experimental Station at the University of Louvain. In due course, a Horticultural Division was created under the Belgian Ministry of Agriculture, and M. van Orshoven was invited to join the staff as technical agent, and it was at this time that he became editor of our Flemish contemporary, *De Tuinbode*. At the outbreak of war, M. van Orshoven was sent to England as an official representative of the Belgian Ministry in this country. He acted on several inter-allied commissions, and organised the employment and allotment schemes for Belgians who had taken refuge in this country, and it was for his many services rendered in this and other connections that the British Government awarded him the honour of M.B.E. Many of our readers will remember that during the war period M. van Orshoven edited and contributed to the French page of *The Gardeners' Chronicle*. After the war, M. van Orshoven was appointed Director of the Horticultural Department of the Belgian Ministry of Agriculture. In the course of his duties he travels throughout Belgium and has entire charge of the Horticultural Education, Horticultural Experiments, and the Phytopathological Service of his country. He also takes a particular interest in commercial horticulture and, through his department, renders excellent service to those who grow fruits, flowers and vegetables for the principal Belgian and foreign markets. We have profound admiration for M. van Orshoven's wide knowledge and delightful personality, and it is with very great pleasure we take this opportunity of publishing his portrait.

M. H. VAN ORSHOVEN.

Spring Flower Show at Glasgow, 1928.—Messrs. Austin and McAslan have made arrangements to hold a Spring Flower Show at the M'Lellan Galleries, Glasgow, on March 14, 15 and 16 next. A schedule of fifty-nine classes has been prepared, and the prizes will be open for competition by the firms' customers; entries close on March 6, 1928.

Manchester and North of England Orchid Society.—The meetings of this Society for the session 1927-8 have now been arranged. The Committee will sit at 12 noon at the headquarters of the Society, Holdsworth Hall, 90, Deansgate, Manchester, on September 16, October 7 and 21; November 4 and 25; and December 16, 1927; and on January 13 and 27; February 10 and 24; March 9 and 23; April 13 and 27; May 11 and 25; and June 15, 1928, this last date being fixed for the annual meeting.

A Short History of the Pentstemon.—The short histories of popular garden plants, as prepared by Mr. T. Hay, for use in the Royal Parks, add greatly to the interest taken in the flowers themselves. Few people are entirely incurious, consequently when a neat and easily readable notice is placed near a display of Dahlias, Irises or Pentstemons, it attracts attention and the reader thereof obtains information that is likely to excite further interest in the subject of the notice. At the present time Pentstemons are a fine feature of several of London's open spaces, and particularly so in the gardens along the embankment westward of the Victoria Tower, which is such a prominent feature of the Houses of Parliament. The "Short History" accompanying the display is as follows:—"This genus of very ornamental plants was founded by the English physician, John Mitchell, while living in Virginia, in 1741. The name is derived from the Greek, and means five stamens, each flower having five stamens, one of which, however, is sterile. The genus is a large one and contains about 150 species, mostly herbaceous, only a few being shrubby or sub-shrubby, and all are perennial. One species, P. frutescens, belongs to north-east Asia, the others are all American, a large number coming from the western parts of the United States and Canada. About sixty species are in cultivation, twenty having been introduced by David Douglas alone from north-west America and California. There are also now many garden forms in general cultivation. These have mainly arisen from P. Cobaea, a species discovered, by Nuttall and first cultivated from seed sent by Drummond from Texas, and from P. Hartwegii (sometimes called P. gentianoides), discovered by Humboldt on mountains in Mexico at an altitude of 11,500 feet, and introduced into cultivation in 1828. English as well as continental growers have done good work in producing, mainly from these species, a race of hardy and vigorous plants producing large masses of bloom; a wide range of colour too has been produced, from white to deepest crimson and purple, and the blooming period extends from early July to mid-December. There are two distinct types, one with spikes three feet high and blossoms of large size, and the other of more dwarf and branching habit and smaller though more graceful flowers. The genus Pentstemon contains many species of value for garden purposes, such as bedding and border plants, while others are specially adapted on account of their dwarf, compact habits for planting in the rock garden. As a general rule, those species of taller habit prefer a rather richer soil and enjoy a rather sunny, drier condition, and so secure the best results in freedom of flowering. Of the species in cultivation, the following are of outstanding merit :—P. Palmeri, rosy-lilac ; P. spectabilis, blue purple ; P. centranthifolius, bright scarlet ; and P. Eatoni, crimson-scarlet. Among those of dwarfer habit are :—P. heterophyllus, P. coeruleus, a beautiful blue ; P. cyananthus, P. Menziesii and its variety Scouleri, all satisfactory plants worthy of a place in every collection. In milder districts, as a wall plant, Pentstemon cordifolius is desirable, the scarlet flowers being very attractive. There are still a considerable number of species known to botanists but not yet introduced, which it is to be hoped may soon be brought into cultivation through collectors in their native habitats."

Dahlia Exhibition in Brussels.—The organising committee of the Dahlia Exhibition, which is to be held in Brussels in September in connection with the Jubilee Exhibition has already received many applications for space, both from professional and from amateur growers, including some from France and Holland.

A Dutch Auction in Germany.—At Heidesheim (Rheinhessen), in Germany, an auction market has been formed, equipped with an electric recording dial similar to that seen at Aalsmeer and other places in Holland. This was recently installed, and the occasion was celebrated by a little gathering of notables and those interested. Heidesheim is the first town in Rheinhessen to install such a "clock," and is proud of the distinction thus bestowed upon it.

Picture Postcards of British Orchids.—A fine series of coloured picture postcards illustrating British Orchids is now issued by the British Museum (Natural History), Cromwell Road, S.W. 7., whence they may be obtained in sets of five, the price of each set being 1/–, or 1/1 by post. The different sets are numbered F.16 to F.21 and the Orchids illustrated are as follow :—(F.16).—Orchis Morio (Green-winged Orchis) ; O. mascula (Early Purple Orchis) ; O. Fuchsii (Spotted Orchis) ; O. praetermissa (Purple Marsh Orchis), and O. incarnata (Crimson Marsh Orchis). (F.17).—Orchis pyramidalis (Pyramidal Orchis) ; Ophrys apifera (Bee Orchis) ; O. sphegodes (Spider Orchis) ; O. muscifera (Fly Orchis), and Neottia Nidus-avis (Bird's Nest Orchis). (F.18).—Orchis purpurea (Lady Orchis) ; O. ustulata (Dwarf Orchis) ; O. maculata (Spotted Orchis—Moor form), Himantoglossum hircinum (Lizard Orchis) ; and Aceras anthropophora (Man Orchis). (F.19).—Gymnadenia Conopsea (Fragrant Orchis) ; G. albida (Small White Mountain Orchis) ; Coeloglossum viride (Frog Orchis) ; Platanthera bifolia (Lesser Butterfly Orchis), and P. chlorantha (Greater Butterfly Orchis). (F.20).—Epipactis Helleborine (Broad-leaved Helleborine) ; E. atropurpurea (Small-flowered Helleborine) ; E. palustris (Marsh Helleborine) ; Cephalanthera latifolia (White Helleborine), and C. rubra (Red Helleborine). (F.21).—Herminium Monorchis (Musk Orchis) ; Spiranthes spiralis (Autumnal Lady's Tresses) ; S. stricta (American Lady's Tresses) ; Listera ovata (Tway-Blade), and Cypripedium Calceolus (Lady's Slipper).

Rose Show in Brussels.—The second exhibition of the Belgian Society—alluringly named "Friends of the Rose"—was a great success, and the Brussels Botanic Garden was crowded with visitors. The chief honours were carried off by M. Du Pont, of Ghent, closely followed by the Club known as "Notre Jardin," of which many of the members are ex-soldiers.

Autumn Exhibition in Vienna.—The great success which attended the Spring Exhibition in Vienna has encouraged the Austrian Horticultural Society to plan a flower show to be held in connection with the Vienna autumn fair from September 4 to 11. The exhibition will comprise plants and cut flowers (warm house, cold house and hardy), decorations of all kinds, fruit trees, vegetables, garden architecture; and sundries.

Appointments for the Ensuing Week.—Monday, August 15: Harrogate and District Horticultural Association's Meeting. Tuesday, August 16: Royal Horticultural Society's Committees meet ; Clay Cross Horticultural Society's show. Wednesday, August 17: Bangor Horticultural Society's show (two days) ; Shropshire Horticultural Society's show ; Banffshire Horticultural Society's outing. Thursday, August 18: Royal Horticultural Society of Aberdeen show (three days) ; Peebles Flower Show. Friday, August 19: Montrose Horticultural Society's show (two days) ; Blairgowrie Flower Show (two days) ; Carnoustie Flower Show (two days) ; Cupar-Fife Flower Show (two days) ; Forfar Flower Show (two days) ; Stranraer Flower Show ; Rothesay Flower Show. Saturday, August 20: Charfield Fête and Flower Show ; L.M.S. Railway Horticultural Society's show at Manchester ; Burnley Horticultural Society's show; Airth Flower Show ; Alyth Flower Show ; Beattock Flower Show ; Blackwood Flower Show ; Broughton Flower Show ; Carnwath Flower Show ; Inverkip Flower Show.

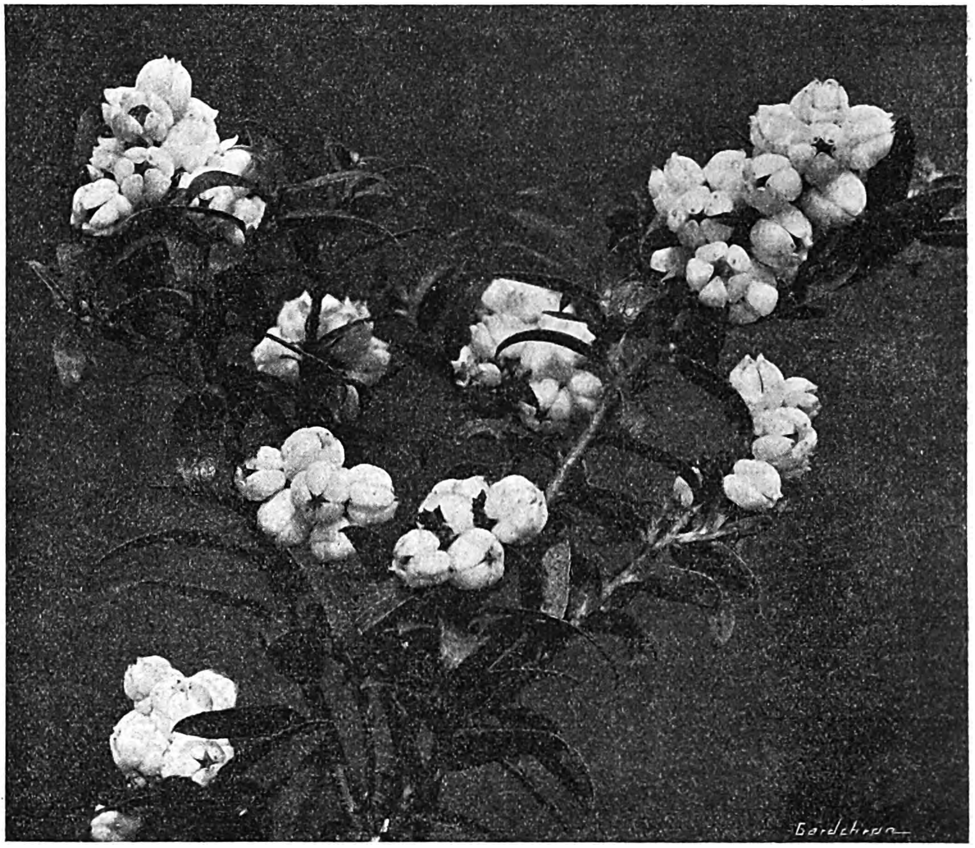

FIG. 53.—GAULTHERIA HISPIDA.
R.H.S. Award of Merit, August 3. Fruits white. Shown by Mr. Gerald W. Loder. (see p. 118).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Crystal Palace.*—We are now to see what gardening can do when unrestricted by cost and unconfined by such narrow space as it has previously been cramped in. Sir Joseph Paxton has begun the experiment of a park under glass. The Crystal Palace at Sydenham, in which the great Conservatory at Kew would make an aviary, has been commenced in earnest ; the plans are decided upon ; the workmen are there ; levels are made ; roads are cutting, mounds are rising, a forest of iron is again invading the ground, and, if the directors of the operation are not mistaken, nine months will bring the whole to a completion. The place that has been selected for this experiment is a hill-side on the borders of Kent and Surrey, close to Norwood, and looking to the south. Than the situation nothing can be more beautiful ; from the summit of the hill the eye ranges over a fertile valley ; richly wooded and winding along till it fades into the horizon. Though near London, there is not a symptom of its neighbourhood ; the trees are as healthy, the foliage as verdant, the grass as clean as in Derbyshire ; nor is there any probability of the vicinity being discoverable for years to come—for the hill turns its back to the metropolis, with all Dulwich and Herne Hill between. It is just below the ridge of this hill that the new Crystal Palace is to be placed, with its three transepts at right angles to the ridge ; the principal transept will be one hundred feet higher than the old one, and thus the building will become a landmark for miles around. The great fault of the old building was its insufficient elevation, and the long unbroken line of walls. The new situation removes the first of these defects, and the other is effectually cured, not only by the new transepts, but by throwing out two vast wings from the extreme ends of the building and at right angles to it ; so that the whole will form a kind of court with three sides, the garden side remaining open. The area of this court is to be an enormous parterre enriched with statuary and fountains. Away from it, right down the hill, stretches a broad walk, terminated by a circular basin, and having on either side a richly decorated garden abounding with pieces of water intermingled with shrubberies, and alive with fountains. The other portion of the ground, forming the park, will, we presume, be converted into a pleasure ground, where visitors may enjoy themselves as they best like. The interior of the Palace will form a garden of some thirteen or fourteen acres, in which the Palms of the tropics are to contrast with the Orange and Myrtle of milder regions ; and the visitor is to stroll among groves of Camellias and Chinese Azaleas. *Gard. Chron., August* 14, 1852.

Publications Received.—*The Propagation of Hardy Trees and Shrubs,* by G. C. Taylor, assisted by F. P. Knight ; Dulau and Co., Ltd., 32, Old Bond Street, W.1 ; price 5/– net.—*The Book of Bulbs,* by F. F. Rockwell ; Macmillan and Co., Ltd., St. Martin's Street, W.C.2. ; price 12/6 net.

The Week's Work

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon,
Bletchley Park, Bletchley, Bucks.

Dwarf Laelias.—Plants of Laelia pumila and its varieties Dayana and praestans, with many hybrids therefrom, are now making new growths, and as young roots are produced from their bases, repotting may be necessary. L. Jongheana, which was imported a few years ago in considerable quantity, also succeeds under the same conditions as L. pumila, and therefore may be treated in a same manner. These dwarf Laelias are best cultivated in shallow pans suspended near the roof glass, where they will receive a maximum of light, and given a position where there is a considerable range of temperature between the opposite seasons of the year. The small quantity of material sufficient for the plants to root in must at no time be allowed to become dry, and during the growing season water should be liberally supplied; the higher temperature should then be maintained, taking care not to let it fall below 55°. This treatment accords with the climatic conditions under which the plants grow in their native country.

Potting.—When re-potting these Orchids, place a few crocks in the bottom of the pan to ensure good drainage; press the compost firmly and finish off by inserting sufficient heads of living Sphagnum-moss to make a nice green surface on the compost when the plants become thoroughly established. Osmunda fibre, cut into rather short portions, with a little Sphagnum-moss and sufficient crushed crocks added to ensure porosity, provides a suitable compost. As these small plants resent frequent root disturbance, those that have sufficient rooting space for another season's growth, and the compost is in good condition, may be thoroughly cleaned and left for another year.

Watering.—Water should be applied sparingly to the newly-potted plants until the roots become active, when they need a liberal supply as do the undisturbed plants. Spray the foliage lightly whenever the weather is favourable. This treatment should be continued until the plants come into flower and the new pseudo-bulbs are fully developed; after which they may be kept slightly on the dry-side throughout the resting season, but even then the plants must not suffer for the lack of moisture. These Laelias grow freely during the summer months if suspended from the roof, in a rather humid position in the cool Odontoglossum house; but they are best accommodated in an intermediate temperature during the winter. Those few hybrids that are of stronger growth may be placed in pots and be given similar treatment to that afforded Cattleyas and Laelio-Cattleyas of the cooler section.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord
Wavertree, Horsley Hall, Gresford, N. Wales.

French Beans.—A good batch of these should now be sown in cold frames that have been used for early Potatos. A dressing of bone-meal should be sprinkled on the surface and well forked into the soil before sowing the seeds. Make the soil fairly firm to promote sturdy growth. Keep the crop as cool as possible to provide late autumn supplies. Seeds may also be sown in pots and treated similarly. Keep the foliage well syringed after hot days, or red spider will quickly appear; a little very weak soot-water may be used occasionally when spraying, as this helps considerably to keep the pest at bay.

Lettuces.—Seeds should be sown during the next two or three weeks, on sheltered borders, for late crops, choosing varieties with a somewhat hardy constitution. Varieties to withstand the winter, such as All-the-Year-Round, Hardy Hammersmith, Black-seeded Bath Cos, and Dunnetts' Giant Winter Cos, should be sown about the third week, and also during the last week of this month.

Spring Cabbage.—The main sowing of this useful vegetable should be made now. Plant out good breadths of Coleworts for an autumn supply.

Endives.—Plant these in quantity, but do not crowd them, or rotting will result. Sow more seeds for the latest supply, and for preference, at this date, use the Round-leaved Batavian variety. Strong plants with good hearts, should be blanched, using sufficiently large pots for this purpose. Place a piece of slate or tile over the hole, to ensure perfect darkness.

Carrots.—Where frames can be spared, sow seeds of the stump-rooted varieties to provide young succulent roots for use during the greater part of the winter. The crops should be grown as cool as possible, with the lights removed until severe weather sets in.

Cauliflowers.—There should be an abundant supply of good heads during this month. Look over the plot occasionally, and bend the leaves over the heads to prevent the sunlight from discolouring the curds. Should the weather be at all dry, give the bed a good soaking with liquid manure.

Spinach.—Make another sowing to withstand the winter. Sow Perpetual or Spinach Beet as well as Prickly or Winter Spinach. Earlier sowings should be kept well hoed, and will prove useful, before the main crop is ready.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Cyclamens.—Seeds of Cyclamens should be sown during this month to provide plants for producing flowers next year. Late sowing is frequently the main cause of failure with these fine plants. Old seeds germinate very slowly and irregularly, therefore it is advisable to purchase seeds of an improved strain occasionally, although it is also a good plan to save seeds from one's own plants that are of exceptional merit. I prefer to sow the seeds in six-inch pots, which must be clean and well-drained. A compost of two parts loam, two parts peat, one part leaf-mould and one part sand is excellent for the young seedlings and for the seed bed. Distribute the seeds evenly and thinly, because better results are obtained when the season arrives for pricking off the young seedlings than when the seeds are sown haphazard. Cover the seeds a little more deeply than is desirable for most greenhouse subjects, and water them in with a fine rose can. Afford shade from bright sunshine and stand the receptacles in a temperature ranging from 65° to 70°.

Schizanthuses.—These are among the finest annuals for growing in pots for greenhouse and conservatory decoration, and the best results are obtained from autumn sowing. Seeds to provide an early batch should be sown now to secure a succession; another sowing may be made during the last week in September. Seeds of Schizanthus germinate very quickly, therefore it is not necessary to sow them in heat; the better plan is to stand the receptacles in a cold frame, and so soon as the seedlings appear through the soil, raise the pans close up to the glass to prevent the young plants from becoming drawn and weakly. A light open compost will suit Schizanthuses. So soon as the seedlings can be safely handled they should be pricked off into boxes, and grown under the coolest conditions possible.

Clarkias.—These are also excellent annuals for pot cultivation and should receive similar treatment to that recommended for Schizanthuses.

Fuchsias.—Where Fuchsias are grown and good plants are required for next season, cuttings should be inserted now in a light open compost; they will soon form roots in an intermediate temperature. If standards are required the plants should be kept growing steadily through the winter months.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford
Wrotham Park, Barnet, Middlesex.

Early Pears.—Several of the early varieties of Pears will soon be ripe. Fruits of the smaller varieties are best gathered and eaten direct from the trees; others should remain for a few days on the shelves in the fruit room. Doyenné d'Ete is one of the earliest and in some seasons quite sweet and very pleasant, but if left too long on the trees the fruits become soft and mealy. Colmar d'Ete ripens a little later and is a variety worth growing where early Pears are desired. Beurré Giffard and Jargonelle are also very good in their season, but as the fruits of the very early varieties are quickly over, trees should be planted sparingly. Williams's Bon Chrêtien, Clapp's Favourite, Dr. Jules Guyot, Marguerite Marillat, Beurré d'Amanlis and Triomphe de Vienne are all varieties that should be carefully watched, the fruits being gathered at intervals, and a little under-ripe. Trees bearing good crops, especially cordons growing on light porous land, should have their roots thoroughly watered, if necessary; although there have been very heavy rains the roots of all wall trees are very dry beneath, and this fact should not be overlooked.

Figs.—Trees trained on walls are making good growth. Reduce the shoots, if not already done, to a reasonable number, in order to give the fruit a better chance to develop and ripen. The wood retained for next season's crop will also benefit by this full exposure to the sunshine. Shoots not wanted for extension may be shortened, more or less, but those required to fruit next year should not be touched as it is medium, well-ripened wood that bears the most and best fruits. Large, established trees with roots in a somewhat restricted space, and bearing good crops, should be fed liberally with liquid manure or some good concentrated fertiliser.

Early Apples.—A few early varieties will now be ripe and fit for dessert. It is a common mistake to allow the fruits to remain too long on the trees. The fruits of some varieties are best gathered and eaten so soon as picked; others are best when gathered and stored for a brief period. Pick the most forward fruits at frequent intervals. Several early varieties are bearing good crops, notably Irish Peach and Early Juneating, and these may need some protection against birds.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P.,
Ford Manor, Lingfield, Surrey.

Frame Melons.—Melons in frames have not had a good time this season, nevertheless the fruits should be well advanced if not actually ripening. Each fruit should be elevated upon an inverted pot to keep it clear of water and so that heat and light may reach it. A few laterals may remain at this stage to assist the fruit and keep the plants in health; as the fruits ripen gradually allow drier conditions about the roots, but the bottom heat should be kept up to the mark, if possible, as by its use liberal ventilation may be maintained. Melons vary considerably in the ripening stage, some varieties being fit for use quickly, whilst others go on improving for several days, hence the advantage of keeping to one or two good sorts and learning to know when they are fit for table.

Late Melons.—A few plants of some free setting variety may be placed into twelve-inch pots for providing a supply of late fruits, the most important consideration being the provision of plenty of top and bottom heat when the crop is swelling and ripening. Plants put out in July will ripen their fruits in September, and seedlings raised at the end of July should carry the supply through October. After the latter date the nights being longer and colder, calculations are apt to be upset, but this should not prevent those who have light and efficiently-heated pits from giving suitable varieties a trial. Of two evils it is better to sow rather early than too late as October Melons come on slowly, but they may be kept in good condition for some time in a warm fruit room. Large masses of compost which cannot be dried and warmed quickly are objectionable, hence the wisdom of using pots, or planting in very narrow pits over bottom heat which can be regulated at pleasure. The most critical periods being the setting and ripening of the fruit, avoid too high feeding and do not allow the bottom-heat to fall at the finish. The best compost for late Melons is strong, friable loam, old lime rubble, a little bone-meal and a dash of soot; on no account should it be rich enough to induce gross foliage. The pots should be liberally crocked and the soil rammed fairly hard. Two fruits to a plant are ample, set on the same day, if possible, and when these are the size of hen's eggs, feeding may be commenced with weak liquid manure, the house damped and the plants lightly syringed and shut up early on fine days.

Pot Vines.—Vines intended for early forcing should receive more airy conditions, especially on fine days. If rooting through the pots is suspected the pots should be disturbed, but it must be borne in mind the roots should never become dry until ripening of the leaves gives the signal for a gradual reduction of moisture. The best preventive of drought is an extra mulch, and at a later date the removal of the first laterals from the base upwards is desirable, as the buds cannot be too well ripened.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Veronica Shirley Blue.—This dwarf, early-flowering Veronica, with its beautiful blue flowers produced in great profusion, is ideal for the rock garden, for edging the front of the herbaceous border, or for planting in quantity as a carpeting for beds of spring-flowering bulbs. Where good stocks exist it may be increased by division; failing this, it may at this time be increased by means of cuttings, which root readily if dibbled into a bed of sandy soil in a cold frame.

Romneya Coulteri and R. trichocalyx.—These, together with the hybrid between them, are ideal for hot, dry situations; they grow and increase freely in poor stony soils, and in such situations are more likely to prove hardy, than when in too rich soil, for, in common with many other Californian plants, damp and stagnant moisture proves fatal to them during the winter. Romneyas may be readily increased by means of root cuttings, which should be inserted in pots of sandy soil during August or September, and subsequently grown in pots until planted out, for they do not transplant successfully. When growing in light, stony ground Romneyas often run underground, producing suckers which may be detached with pieces of root stock attached; these may be placed in pots, stood in a cold frame, and kept close until they are established.

Dendromecon rigidum.—This is another Californian Poppywort generally regarded as being a difficult subject to propagate. It may, however, be propagated at this season, with every chance of success, by means of cuttings, selecting for this purpose short, twiggy growths about three inches in length. These should be inserted in small pots of sandy soil and stood under a propagating glass in a cool greenhouse. When potting the rooted cuttings great care must be exercised as the plants resent root disturbance. Even in the south Dendromecon rigidum is best planted at the foot of a warm wall, while in the colder parts of the country the shelter of a cool house is necessary. The largest specimen I have seen was planted at the foot of and trained up the back wall of a greenhouse.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Vines.—Late Grapes are now colouring rapidly, and more air should be admitted to the houses on all suitable occasions, by opening the front ventilators; a buoyant atmosphere is needed to dispel moisture from the fruits and foliage. The borders must be kept sufficiently moistened at regular intervals, and a close watch kept on all sub-laterals and secondary growths, pinching these back to two or three leaves before they become too prominent. Such growths develop very quickly at this season, and if not restrained soon rob the bunches of their full share of sap. For some obscure reason the small, secondary bunches, which are also easily overlooked, present none of those difficulties which the main bunches do in regard to setting; they set every berry and plump up very quickly, but as they are of no value they should be removed so soon as seen. The main leaders which were stopped some time ago are again growing freely, and while not permitting them to become too rampant, they should be allowed a certain amount of freedom of growth, as they form a safety valve, and carry off any surplus sap, thus preventing the splitting of the berries. Where "mealy bug" is troublesome another effort should be made to subdue this pest; use a small brush dipped in methylated spirit, and touch every spot which shows traces of this intruder.

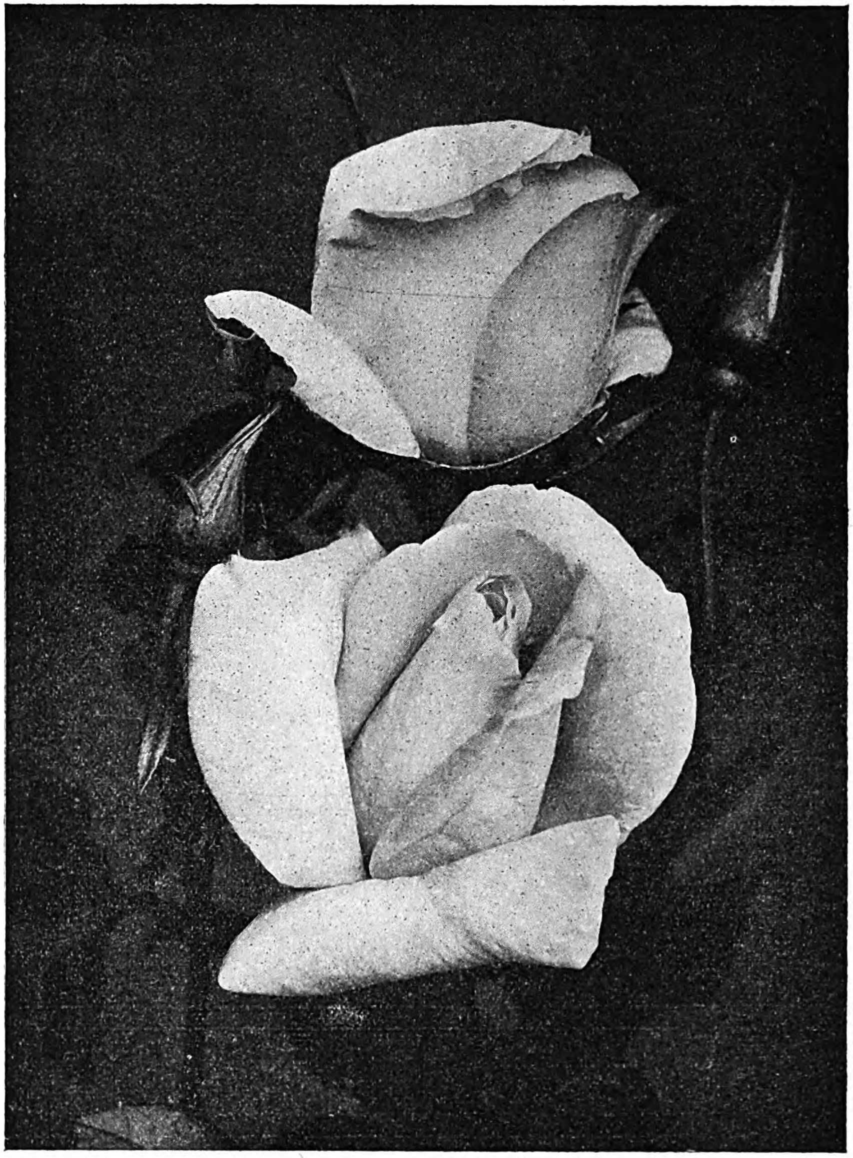

FIG. 54.—ROSE BERNICE.

N.R.S. Certificate of Merit, July 1. Flowers peach-pink and yellow. Shown by Mr. J. H. Pemberton.

(see p. 36).

Runner and Climbing Beans.—These are now growing strongly, and it is necessary to stop the leading growths, so that the pods may swell quickly. This is best done when the plants have reached a height of six feet or so, as then sufficient haulm has been made to carry a fair crop, which is as much as can reasonably be looked for in most northern districts. Some varieties of Dwarf French Beans have recently developed a climbing nature, throwing out long, straggling shoots, which twine and sway around as if reaching for supports; such shoots must be removed and the plants kept dwarf by compulsion, as otherwise they cannot be expected to mature a crop. The variety which has shown this bad habit most with us is the well-known Canadian Wonder, and seedsmen would be well advised to make a more careful selection of this useful type of French Bean. Many splendid varieties of Stringless Beans are now procurable, and these are a great advance on the older varieties, being quite fit to use when of fair size, never becoming fibrous and tough. Those who have not cultivated Stringless Beans should give them a trial next season.

IRISES IN 1927.

The popularity of the Iris still increases. The first Iris Show on June 2 was a great success; it received a warm welcome from the horticultural press, and hopes were expressed that it had come to stay. If I may judge of the patriotism (if so strong a word is permissible) of the members of the Iris Society by the emphatic way in which they supported the show, their enthusiasm is genuine, for everyone who had anything to exhibit brought it to Vincent Square. Moreover, the support given by the nurserymen was genuinely unselfish as they expressly desired that their exhibits, and very beautiful they were, should have no reward.

At Chelsea, the Irises were hardly so good as usual, but the season was unfavourable, and May 24 is an early date for showing Irises at their best.

The Joint Committee of the R.H.S. and the Iris Society paid four or five visits to the Iris beds at Wisley and diligently examined the plants in flower. Over 800 varieties are now growing there, and they made a fine display. They had been carefully planted and tended, and reflected great credit on Mr. Chittenden and his assistants. In the list* of plants which were given the Award of Merit will be found many old favourites. As much interest is at present being taken in yellow sorts, I would call attention to the three which gained the Award of Merit—Amber, a rich yellow self; Marsh Marigold, and Fro, with yellow standards and crimson falls. Amber is still expensive, but the American variety Shekinah (the mother, I believe, of Amber), not quite so large or so richly coloured, is an excellent variety and may be bought at a moderate price. Personally I look upon it as one of the best flowers in my garden, and it seeds freely.

It would take too long to deal with all the "best" Irises which were to be seen at the Iris Show. Many excellent old and middle-aged varieties were conspicuous. Bruno, Aphrodite, Mdlle. Schwartz, Alcazar, Lord of June, Ann Page, Leonato, Asia—all asserted themselves. Among the newer varieties Mary Gibson and Morning Splendour, the new American, were conspicuous; whilst among the absolutely new flowers, Mrs. Dykes' Zaharoon,† which was selected for the Silver-gilt Medal as the best new bearded Iris of the year; Mr. Bunyard's Castor, a much improved Mercedes; and Mr. Perry's Bardelys, particularly attracted me.

I have had the pleasure this year not only of seeing (several times) the great collection at Wisley, but also Sir Arthur Hort's beautiful garden at Hurstbourne Tarrant, where Ann Page, the white Theseus, and the giant, but shapely, Leonato reminded everyone of the great work which he has done for the Pallidas. I have visited, too, Mr. George Baker's new garden at Sevenoaks which is on the way to fame, not only for its almost priceless collection of Irises but also for its alpines and shrubs.

But the outstanding Iris memory of 1927 which remains with me is that of my visit two or three days before the Iris Show to Mrs. Dykes' garden at Bobbingcourt, with its perfection of site and soil. I went there straight from Wisley, with that great collection still before me, and yet the Bobbingcourt Irises awakened in me an enthusiasm which I fear may almost seem excessive. It was a sight to make an old man young—if I may be so old-fashioned as to quote Tennyson.

Such a sea of blossom, such variety of colour, such difference of pose and stature, made the Irises at Bobbingcourt an absorbing study for the expert and a glorious marvel for the neophyte in Iris growing. Mauve and lavender, blue and purple, yellow and orange, pure white and white slightly overlaid with yellow or blue, and intervening shades of all kinds, including pink and cinnamon, demanded attention. Add to the perfection of growth the lavishness of bloom and the pleasant fragrance and one has all the attractions a garden lover can desire.

Among the hundreds of seedlings I may refer to a few which seem pre-eminent.

Zaharoon (previously mentioned). Cinnamon with a violet sheen. The colouring is much the same as that of Mr. Amos Perry's beautiful Mary Gibson, but the bloom is larger and more imposing.

Khama. Standards light violet-bronze; falls rich velvety dark crimson; conspicuous orange beard.

Cupavo. Reddish-lilac, falls darker; very large flowers on very tall stems; massive and imposing.

Beltane. Dusky deep violet, falls darker and velvety.

Akbar. Very dark, perhaps best described as swarthy.

Britoness. Large pale yellow, perhaps a little thin in texture.

Irises other than the bearded varieties were to be seen at Vincent Square on June 2. It was a non-bearded Iris which gained the Silver-gilt Medal of the Iris Society and the Dykes' Memorial Medal for the best new Iris of the year, viz., Mr. Amos Perry's very beautiful cross between I. chrysographes and I. Douglasiana, called Margot Holmes.

Iris laevigata was much admired. Forms of I. sibirica were well shown; the foremost among them being Perry's Blue (which seems to me the best of all), Emperor, and Snow Queen.

To conclude; the third week in August will soon be with us, and between it and the third week in September lies the time when so many experienced growers tell us bearded Irises may be moved most successfully. *G. Yeld, Orleton, Gerrards Cross.*

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* *The Gardeners' Chronicle*, July 23, 1927, p. 79.

† *The Gardeners' Chronicle*, July 9, 1927, fig. 14, p. 27.

HARDY FLOWER BORDER.

LIBERTIA FORMOSA.

When visiting Wisley recently I was pleased to see a number of groups of Libertia formosa, both on the rock garden and in the wild garden. Although this plant has been in cultivation in this country since 1831, in which year it was introduced from Chili, it has not received the attention it merits.

L. formosa makes a most attractive feature when planted in masses and has the distinct advantage of possessing a most pleasing fragrance. The inflorescence consists of a loosely corymbose panicle upon which a succession of white flowers are produced from May to July. The leaves, springing from the base, are narrow and sword-shaped, they stand erect and close together in a stately clump which makes an excellent setting for the numerous tall flower spikes, and provides splendid protection for the crowns in winter. For this reason it is advisable to let the old and withered leaves remain even at the expense of tidiness. In the northern counties it is advisable to give a little extra protection during hard weather.

Libertia formosa may be raised from seeds in the same way as Irises and may also be increased by careful division of the creeping rhizomes in March or April. It likes plenty of sun and this should be remembered when choosing a site for it in the border or wild garden. *R. K.*

ISATIS GLAUCA.

In this plant we have a pretty Woad, although some people do not care much for it on account of the small size of the individual yellow flowers. But these are produced in such great numbers that a good specimen is more than pleasing and is a real ornament to a border of herbaceous plants, and as it generally flowers from June to August, it maintains its effect for a considerable time. Isatis glauca usually grows from three to four feet high, and has pleasing, glaucous foliage and clouds of golden blooms. I may have a special prejudice in favour of this plant as, many years ago, through the goodness of Mr. Edward Whittall, I received seeds from him at Smyrna and raised seedlings. Some plants which I gave to a friend were distributed with my permission, and from these I believe the present stock of plants in this country has been raised. I. glauca produces seeds freely and these may be sown in spring. It is quite hardy and has no special requirements in regard to soil, thriving in any good garden compost. *S. A.*

INDOOR PLANTS.

APHELEXIS.

Included in the group of plants familiarly known as "Everlastings" is the interesting South African genus Aphelexis, once much in vogue for greenhouse display and exhibition purposes.

The best known of these Composites is A. humilis, also known as Helipterum humile, and now referred to as Helichrysum humile. This plant has rosy-pink, terminal and solitary flowers on scaly peduncles; the numerous branches are slender, covered with a white tomentum and the habit is dwarf and compact. The flowers open only during sunshine.

Good varieties of this species—once well-known—are grandiflora, highly esteemed for exhibition purposes; purpurea and rosea.

Aphelexis humilis was introduced from The Cape in 1810. It is propagated by cuttings obtained in spring or summer. When re-potting becomes necessary it is best done in early spring. The general treatment desirable for Aphelexis is similar to that required by Heaths, although the plant under notice is more easily amenable to cultivation and succeeds admirably in a compost of two parts peat and one part leaf soil, with sufficient silver sand to render the whole porous.

CORREA CARDINALIS.

When well grown, few plants will flower more freely, or over a longer period, than will the Correas, and of this interesting family, C. cardinalis is one of the most attractive. The flowers are pendant, scarlet, tipped with pale green, and are very persistent. The plants are slender-growing but very graceful shrubs, attaining to a height of from three to four feet. They may be so managed in a cool house that they will give a continuance of blooms from autumn to spring and they are most welcome during the winter months.

Fibrous peat and sand form a suitable rooting medium. After flowering, the plants should be kept in a moderately dry condition and at all times should receive abundance of air and light. Indeed, in the summer they are happier in the open air than under glass. C. cardinalis may be propagated from cuttings but is perhaps better grafted upon C. alba. This quaint and exquisitely beautiful plant is a native of Australia. *Ralph E. Arnold.*

PRIMULA MALACOIDES.

This beautiful greenhouse Primula has become very popular in recent years, and by sowing seeds at various times it may be had in bloom over the greater part of the year. I find a batch of P. malacoides particularly acceptable in spring, when light and graceful flowers are not numerous. In order to have the plants in bloom at that season it is desirable to sow seeds about the middle of August, in a light compost in a frame or greenhouse. Primula malacoides is impatient of heat.

When the seedlings are large enough to handle they should be potted into three-inch pots; in these receptacles they may remain during the winter. Succulent tissues and a very hairy leaf and stem surface in which water collects, render the plants very liable to damping off. It is essential therefore to maintain fairly dry conditions by admitting air whenever the outside weather permits.

In early March the plants should be transferred to five-inch pots which will carry them through the flowering stage. A good potting compost consists of three parts loam, one part leaf mould, one part partially decayed cow-manure, one part charcoal and one part sand. The appearance of the first flower spike is a signal that feeding may profitably begin. For this purpose I find that nothing is more suitable than alternate applications of weak liquid manure and clear soot water. These should be given twice a week until it is obvious that feeding is of no further use.

There are many beautiful forms of Primula malacoides on the market but the best known to me is Sutton's Advance which bears deep rose-coloured flowers with cream centres. *Geo. H. Copley, N.D.H.*

PLANTS NEW OR NOTEWORTHY.

THE PINK MARTAGON LILY.

Lilium sp. (taliense ?), K.W. 6034.

Although this Lily has yet to be determined, it is undoubtedly an acquisition, and will be widely grown as the stock increases.

It was collected by Capt. Kingdon Ward in his 1924-25 expedition to Tibet, and is described by him in his field notes as follows :—"K.W. 6034. Lilium sp. (§ Martagon). Tsangpo Gorge, near Gyala, 8,000 to 10,000 feet, 29-7-24. Flowers pink, the perianth segments closely and evenly spotted with purple, very fragrant, just coming into bloom. Plant two feet to three feet, on shrub and Pine-clad slopes. Not common here. Abundant around Tonghyuk on Pine- and Bracken-clad slopes, with the 'Virgatum' Rhododendron ; in full bloom, scenting the forest. Plant of four feet, bearing twelve to twenty flowers."

The examples exhibited by Lt.-Col. L. C. Messel at the R.H.S. meeting on August 3 (Fig. 55) were from seeds sown in April, 1925. So soon as the seedlings had made a second leaf they were transplanted into five-inch pots, and, later, planted in ordinary soil in the open ground where they continued to grow until autumn. The broad, basal leaves produced at this stage were about six inches in length, and one inch in width. As these withered, sand was placed over the soil surface to keep slugs from damaging the bulbs below.

In the spring, before the main stems appeared, rhizomatous stems were pushed above the soil in the shape of a bow, in the same manner as those of L. Duchartrei var. Farreri; sandy leaf-mould was placed over them to prevent injury from frost and after travelling a foot or so they emerged again, ascended and are now bearing one or two flowers on short, vertical stems.

From the parent bulbs the main stems appeared later, well clothed with leaves two-and-a-half inches in length and three-quarters-of-an inch in width, those at the apex, at the junction of the peduncle and main stem, being broader and more obtuse.

The buds are brownish pink on the outside, two-and-a-half inches in length, and as they open the segments curl back in true Martagon style. A fully-opened flower is two-and-a-half inches across, rose-pink, paler towards the centre, each segment being distinctly marked on the inside for half its length with a central purple-brown line, and plentifully covered with small spots of the same colour. *J. Comber, Nymans Gardens, Handcross.*

LUPINUS CYTISOIDES.

A few years ago Messrs. Barr and Sons first offered Lupinus Paynei to their clients. This is a fine, tall plant which reaches a height of four to five feet when well-grown.

Another Lupin is now in cultivation under the name of L. cytisoides which is a veritable giant among herbaceous plants, surpassed only in vigour and height by the giant Polygonums.

L. cytisoides is a Californian species differing but little in flower and foliage from L. Paynei but of gigantic proportions ; plants just one year old are already eight feet in height, much branched and bearing many spikes of rose-pink flowers. As a plant for the wild garden or isolated bed on the lawn this Lupin would be a remarkable and handsome feature. It is reported to grow sixteen feet in its native habitat and it is said of it, as was written of the Mustard plant of scripture, "the birds of the air lodge in the branches thereof."

In Bailey's *Cyclopaedia of Horticulture*, L. cytisoides is referred to as L. rivularis but the figure of L. rivularis, in tab. 1595 of the *Botanical Register* is not the L. cytisoides now in gardens. In a genus so vast, there being over three hundred species and with distinguishing characters difficult to find, there will always be trouble with names.

IRIS DICHOTOMA.

This very old but still uncommon species of Iris is of interest as being the only known member of the section Pardanthopsis. Much has been written about this species and coloured figures are given in the *Bot. Mag.*, Sweet's *Flower Garden*, the *Botanical Register*, etc. In *The Genus Irises*, Mr. Dykes describes the species at some length, remarking that it is of value for its habit of flowering in August ; also that in bearing so many flowers the plant becomes exhausted and rarely survives a second year.

The flowers open in the afternoon and last but a short time. I have been unable to find any open flowers in the morning or before two o'clock in the afternoon. The flowers are small, the colour purplish-pink, and the habit of the plant is particularly elegant ; the tall, much-branched stem issues from a beautiful fan-shaped cluster of leaves, the whole standing stiff and erect and nearly four feet in height.

Mrs. C. H. Stout of New Jersey kindly sent me seeds of this Iris in February, 1926 ; they germinated readily The seeds were said to have been gathered from a particularly fine pink form but they did not seem to have retained this colouring, the plants having blossoms very similar to those figured in the *Bot. Mag.*, tab. 6428.

It is a native of Siberia and China. *T. Hay.*

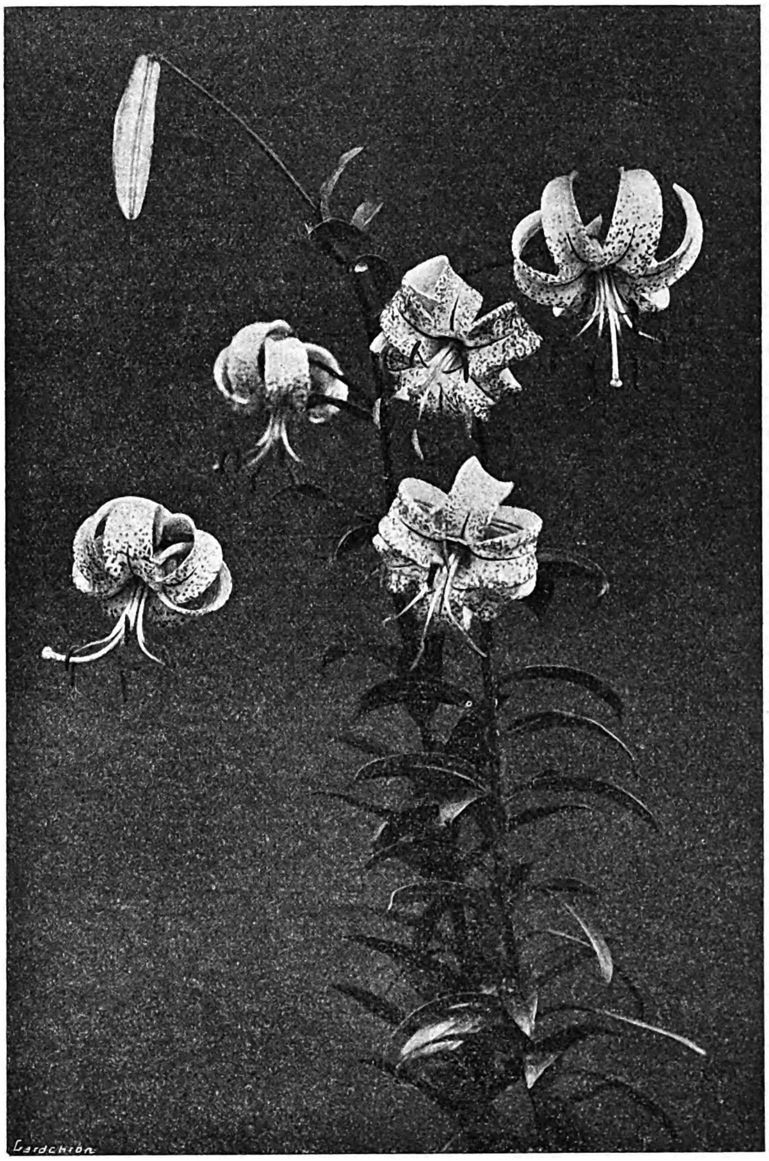

FIG. 55.—LILIUM SP. (TALIENSE ?), K.W. 6034.
R.H.S. Award of Merit, August 3. Flowers pink, with deep carmine or purplish spots.
Shown by Lt.-Col. L. C. Messel.

A REVISION OF VIOLAS.

(*Continued from p. 28.*)

V. hornemannii is, as already stated under V. canina, synonymous with the well-known V. elatior, which Farrer referred to as V. canina stricta.

V. incognita, Brainerd, is the subject of the sweeping assertion that it "deserves no closer intimacy," and is linked with V. fimbriatula, V. sagittata, V. emarginata and V. renifolia. The association of these Violets with one another is confusing as three of the five belong to the cucullata group, while the first and last belong to the palustris group, to which also V. blanda and V. pallens belong. The last two, though not in the front rank of Violets, are dainty and attractive, and the white flowers of V. incognita would appear to be not less so. The leaves are orbicular or reniform. It is a species that spreads from Newfoundland southwards over the whole of temperate North America, but as its identity was for long concealed to botanists it was aptly given the specific name incognita, which means unknown and unrecognised.

V. renifolia is also a white Violet, spreading from Newfoundland west to the Mackenzie River and south to Colorado and the Rockies, it is near to both V. incognita and V. blanda, but may be distinguished by the brown lines on the three lower petals, by the always reniform leaves and by the entire absence of runners. It is in fact said to be the only white Violet that has no runners. It grows in swamps, the station from which it was first collected being a great Sphagnum bog called the "Bottomless Pit" at Hanover, in the region of the Great Lakes.

Following Farrer's order, it may be of interest to write something here, though not in alphabetical sequence, of the three Violets mentioned above belonging to the cucullata group. V. fimbriatula is the fringed or Rattle-Snake Violet with purple flowers and very pubescent leaves, from dry fields from Nova Scotia south to Georgia. V. sagittata is the arrow-leaved or Spade-leaf Violet with lavender flowers, from moist meadows from the New England States west to the Great Lakes and then south to Louisiana. In places it is very abundant; "thousands of plants," states a collector, "covered the ground with a blue carpet, mostly where the land was a little low and damp." V. emarginata is a large-flowered Violet with triangular leaves, from dry woods from the New England States southwards but stopping considerably short of the Gulf of Florida coast. Its specific name was given by reason of its emarginate petals but these are sometimes entire. It certainly appears to be worth closer intimacy.

V. ircutiana, Turcz, is Regel's variety of V. variegata, Fischer. The species is a dwarf, stemless plant, with round or ovate, cordate leaves, dark green above except for the pale green nerves, and violet underneath (whence the name "variegata"), with small dark violet flowers carried above the leaves, white at the base of the petals and with a long pale spur. It belongs to the Patrinii group and hails from mountain slopes in Transbaikalia, Manchuria and Japan. The variety ircutiana differs from the type merely in the leaf formation and that very little, and has been found only near Irkutsk. The red or pale-purple flowers mentioned by Farrer do not appear to belong to this plant.

V. Jooi, Janka, is well known by name but doubtfully in cultivation. It is synonymous with V. purpurea, Stev, and with V. macroceras, Bunge, the last being the oldest and correct name. V. purpurea belongs to the Caucasus and V. Jooi to the Alps of Transylvania and both are the most western manifestations of the great Asiatic Patrinii group of which V. macroceras is one of the principal species. The type exists in Siberia, the Altai Mountains and Tibet, growing in shady places by river banks, among shady rocks near torrents, in woods in the Caucasus and on limestone rocks and hill-slopes in Transylvania. The plant may be distinguished by the short thick root; by the long leaf-petioles; the blades ovate, cordate and crenate; the fragrant flowers scarcely rising above the leaves; the purple, rose, lilac or white, but never violet, flowers; the rather long spur, the purple dots on the seed capsule and the purple seeds.

V. labradorica, Schrank. The distinctive features of this silvestris Violet are indicated by Farrer, and also previously in these articles under V. conspersa. The flowers vary from pale lilac to violet and are sometimes white. It spreads from Greenland and Labrador to the colder and higher places of the New England States and is therefore alpine and subarctic. *The Kew Hand-list* makes V. canina var. Muehlenbergii a synonym of this whereas it is a synonym of V. conspersa.

V. lactea, Smith, is given by Farrer as a pallid form of V. canina, but the flowers of typical V. canina are both dark and pale violet, white at the base. The real distinction lies in the leaves which in canina are either truncate or flatly cordate at the base while those of lactea, besides being narrower, are wedge-shaped at the base. As previously stated, V. lactea is the representative of canina on the Atlantic shores of Europe, being native to Cornwall, Normandy, the Landes district along the shores of the Bay of Biscay, Galicia at the extreme north-west point of Spain, and Portugal (as near Cintra). It has been recorded near Tunbridge and in Surrey, and also (under the name of V. canina var. dunensis (near Bournemouth. The Tunbridge plant was the prototype of the figure in *Smith's Engl. Bot.* VII, tab. 445, published in 1798, and it would be interesting to know if it still grows where the botanist first named it.

V. lanceolata, L., the lance-leaved or Water Violet, is not a form of V. adunca but a distinct species belonging to the palustris group of stemless Violets bearing runners, and more nearly akin to V. blanda, V. renifolia and V. incognita. The white flowers have the three lower petals striped with purple. The plant is small at flowering time but later rises to twelve inches high and is exceedingly profuse of runners. It inhabits bogs and moist meadows and its area extends from Canada through the Eastern States to Venezuela in South America.

V. lancifolia, Thore (V. lusitanica, Rouy and Foucauld) has already been given under V. canina as a synonym of V. lactea.

V. Lapeyrousei is dealt with by Farrer under V. cenisia and there with considerable hesitation as to its identity and name. It will clarify the position of this plant if a summary is given of its various synonyms. Originally described in 1813-18 by La Peyrouse, in his account of the Pyrenees, as V. cenisia, it was subsequently in 1824 recognised as distinct and described as V. cenisia var. diversifolia by Gingins in De Candolle's *Prodromus.* In 1848 it re-appeared as V. cenisia var. vestita in Grenier and Godron's *Flora of France* and again in 1896 as V. cenisia, sub-species Lapeyrousiana, in Rouy and Foucauld's work. From being a variety and a sub-species it has ascended to the rank of species and in 1903 became V. diversifolia (D.C.) W. Bckr., and at that it appears likely to stop.

As it is intermediate between V. cenisia and V. valderia, it may be of use to summarise the differences between the three species and incidentally to define the characteristics of each. The leaves of V. diversifolia are ribbed, densely tomentose, very crowded, with the blade equal in length to the petiole, the lower ones nearly round or very broadly ovate, the upper ones ovate-oblong. The leaves of V. cenisia are plain, not ribbed (except in a few isolated specimens found, *e.g.*, on the Mont Cenis); generally glabrous (becoming less so in its southern area where the Cottian Alps impinge upon the Maritimes); more distant one from another, with the blade approximately one-half shorter than the petiole, the lower leaves ovate, the upper ones generally oblong or rarely lanceolate. The lower leaves of V. valderia are nearly round or broadly ovate, the upper ones oblong or rarely ovate or very rarely linear and the whole plant is less pubescent than V. diversifolia. The stipules of the first are digitately divided into, usually, three oblong leaf-like segments; those of the second are usually undivided but may have one or two very small lobes at the base of the main, leaf-like segment; those of the third are digitately divided into numerous segments. The stems of V. cenisia are short, those of V. diversifolia longer, those of V. valderia much longer. The sepals of V. diversifolia are ovate, those of V. cenisia oblong; the auricles of the former large and nearly entire, of the latter not so large and emarginate; the flowers of V. cenisia are lilac, those of V. diversifolia pale violet, larger and sweetly scented, those of V. valderia deep violet. The first carries one or two peduncles on the stem, the second, the same but shorter, and V. valderia one to three, rarely four or five, and much longer. The root of V. cenisia is very branching, rambling through the scree, that of V. diversifolia is less branching while V. valderia makes almost a tufted non-rambling plant. Finally V. cenisia is exclusive to limestone formations, V. valderia is exclusive to granitic (except in one authentic spot only, overlooking the Roja Valley), while V. diversifolia is indifferent. V. diversifolia is found in the Eastern and Central Pyrenees, on both the French and Spanish sides, on high screes from 7,500 feet to over 9,000 feet where it flowers from June to August. It is curious that no grower has imported this species although many of our alpine specialists have visited the Pyrenees and although V. diversifolia is found among other places on several localities well known to tourists and climbers, such as the Port de Venasque, Mont Carrigou, the summit of Peyresourde, the Pic de Carlitte, and the Monte Serra Negra near Puignal. The attempt to cultivate it would present considerable interest as it is not a lime-lover or lime-hater as the other two kindred species, and while V. valderia has been occasionally grown and flowered in England, I know of no record of V. cenisia lasting more than a season or so.

V. latiuscula, the broad-leaved Wood Violet, is one of the best of the North American section and the account given by Farrer requires no comment, except that the recorded localities are dry, sandy or gravelly places in open woods, and not rich humus as is suggested by him. The species is more restricted in its area than its congeners—being confined to the district between West Vermont and New Jersey and N.-W. Pennsylvania. The flowers are deep violet rather than Imperial purple.

V. libanotica, Boissier, is given as a smaller version of V. hirta but belongs in reality to the small and little known section of Lignosae, which includes also V. chelmea and is distinguished by the woody rootstock as the sectional name denotes, by being stemless and having small ovate leaves. V. libanotica makes a small caespitose plant, with coarsely-toothed leaves which are wedge-shaped at the base (cordate in V. hirta). The flowers are pale violet or white on peduncles as long as the leaves and have a long slender spur. The species is native to limestone soil in alpine and subalpine regions of the Lebanon in Syria, as on Mount Hermon.

V. linguaefolia, Nuttall, is described as a distinct species but is in fact synonymous with V. Nuttallii, Pursh. V. linguaefolia was originally described as a form with elongated root leaves, but as the leaves of typical V. Nuttallii have the blades lanceolate or ovate-lanceolate, tapering into channelled petioles, the distinction between species and form can scarcely be maintained. *E. Enever Todd.*

NOTES FROM A WELSH GARDEN.

MUTISIA DECURRENS has flowered exceptionally well this season. About a score of the very large, fiery orange blossoms were expanded at the same time and the effect was a of colour display of remarkable brilliancy. Owing to the persistent and heavy rains of July it seemed at one time as if the blooms would perish before being fully developed, so long were they waiting for the sun in the half-opened, expectant state. This was the fate with many of the Cistuses, more especially with the large-flowered kinds. C. ladaniferus in particular suffered badly and its lovely, pure-white form, immaculatus, failed to open at least one-third of its buds.

Maurandia Barclayana, a Mexican climber, I have always treated as an annual, but some of last year's plants which had escaped the autumnal clean-up survived the winter and came into bloom by the middle of July. These are growing against a south wall and are now about six feet high, all but the lower parts of the stems being densely furnished with the pretty, arrow-head leaves and large Foxglove-bell flowers of a rich violet with a white throat.

Gaultherias have fruited very well this season, none bearing a more attractive crop than the little G. trichophylla. The oval or elliptical berries of this very dwarf Himalayan species are enormously big for the size of the plant and of a vivid Wedgwood blue. There is nothing more delightful in the round of one's garden year than the discovery of these berries, all nestling among the delicate, heathy foliage, like so many china beads. Nearly as tall as G. Shallon are G. Hookeri and G. Veitchiana, their clusters of fruits, each the size of a Pea, ranging in colour from a pale, livid blue, almost white, to something approaching indigo. The finest of the white-berried Gaultherias grown here is one bearing the name of G. pyrolaefolia, the bunches and individual fruits being much larger (as are the foliage and flowers) than those of a closely-allied species more often seen (probably G. cuneata).

The large, densely-clustered, bright cherry-red berries of our native Cowberry (Vaccinium Vitis-Idaea) are by no means unwelcome at this season, especially in woodland or where the little shrub can spread without interfering with other things. This and V. corymbosum, a much taller, deciduous species, which is good in blossom, fruit and autumn colour, are, if not the choicest, perhaps the most generally satisfying of their race in this garden.

Growing in the woodland with the above and other Ericaceous plants is a well-established clump of Deinanthe coerulea, now opening the first of its beautiful lavender blossoms. These blooms, nodding from a stem about nine inches in height, have a superficial resemblance to those of an Anemone of the Allenii type, but the texture of the flowers, their satiny sheen, cool, wan tint and the silver-grey of the prominent wreath of anthers are peculiarly their own and surpassingly lovely.

One of the most striking objects in a mixed border is a mass of Lobelia Tupa, nearly six feet high and as much across. The stately stems of this noble old plant are amply furnished with sage-green, Mullein-like leaves with a red mid-rib and they terminate in bold spikes of glossy, dark-crimson flowers. L. Tupa is quite hardy with me and is never given any protection. L. Cavanillesii (latifolia) on the other hand, we very nearly lost altogether last winter.

Mitraria coccinea, the Mitre-flower, has done fairly well this year, the pure scarlet, urn-shaped blossoms, one-and-a-half inch long, never failing to attract attention by the brilliance of their colour. But this is one of those shrubs which cannot be relied upon to do so well here as it does in the south-west; with it we have to be thankful for moderate returns. Tropaeolum speciosum, trailing over some Azalea bushes, is another Chilian, but one that we can always depend upon for any amount of colour from July to October. Albeit, in the splendour of its wonderful blossoms, Desfontainea spinosa can easily eclipse any other flowering shrub or plant in the garden or woodland during the later summer, and this year the bushes are bearing an exceptionally heavy and gorgeous crop.

It would be difficult to decide whether Chilian or Californian shrubs are the more successful in this part of Western Britain. Both do admirably on the whole and individuals, among the latter at any rate, are more floriferous than they are in their own country. Fremontia californica, for example, has been ablaze with such quantities of its golden goblets, every twig to the tips of a ten-foot specimen being closely crowded with them for five or six weeks, that they entirely hid from sight every vestige of foliage. In its own way this magnificent shrub is quite as impressive in its amazing brilliance as Desfontainea. Speaking generally, however, the shrubs of Chili and California enjoy rather different treatment respectively. Here at any rate the Chilian ask for a soil that is cool and rich and often appreciate a north aspect; the Californian enjoy a poor, stony root-run and all the sun they can possibly get.

Cotoneasters here bloomed with unusual freedom and promise a great crop of berries. These latter were very striking on C. praecox (closely alled to C. adpressa) as early as the first week of July, and at the same time the red-berried Elder, Sambucus racemosus was affording a touch of autumnal colour with its brightly-clustered panicles of scarlet fruits.

Among the Sedums of the season S. pulchellum, by the waterside, still maintains its reputation as one of the worthiest of its race. In the rock garden S. amplexicaule has enlivened its apparently withered foliage by putting up clusters of lemon-yellow blossoms which will be followed by the glaucous-blue leafage which is such a delightful feature of this Stonecrop in winter. Though not perhaps a showy plant, S. pruinatum adorns the tips of the tall, slender stems which rise from the ends of its runners, with wide-rayed stars in a singularly vivid yellow. S. Praegerianum always strikes a note of distinction with the rosy flowers which fringe the margins of its almost flat, cart-wheel rosette. This Tibetan species promises to be a most useful rock-garden Stonecrop with a character all its own. Near this I have S. oaxacanum, a Mexican. This is a more recent arrival, and one that has not been put to a prolonged test in the open, but it is now showing promise of blossoms.

Potentilla nitida, whose rose-pink blossoms have such a telling setting in the silvered foliage, is flowering cheerfully in the moraine. On a dry ledge Acantholimon venustum, its neatly-round cushion nearly a foot across, gives somewhat the same attractive blend of soft-pink and steely-grey. Genista horrida is here, also, its bristly spines set with showy flecks of gold, and close by it is the lichenous film of Raoulia subsericea peppered with the mustard-yellow of the tiniest flower in the garden.

The true Veronica Bidwillii, covering a square foot with its dense mat of glossy green, is very delightful, its dainty flights of white, pink-veined flowers held erect on extremely slender, six-inch stems. V. spicata alpina (nana) is another choice, dwarf, Speedwell which at this season covers its deep green carpet of leafage with little, cone-shaped spikes of violet. Nor can I pass by the fragile loveliness of the purple-starred Campanula arvatica and the very satisfactory C. Jenkinsae. The origin of this last appears to be unknown but it is one of the best of white sorts of its own stature (six to nine inches) the habit being sturdy and upright, the bells large and of good texture. *A. T. Johnson, Ro Wen, Conway, N. Wales.*

TREES AND SHRUBS.

VERONICA MATTHEWSII.

For cultivation in pots in an unheated or cool greenhouse, this New Zealand Veronica (Fig. 56) is a useful and most attractive plant. It should be a welcome addition to southern and western gardens. So far, it is proving a valuable addition to our shrubbery borders for summer flowering, but we have not had a severe spell of frost during recent years to test its hardiness for general planting.

A native of several localities, in the South Island, Veronica Matthewsii is named in compliment to the late Mr. H. J. Matthews, for some years head of the New Zealand Forestry Department. He cultivated many little-known native plants in his garden at Mornington, near Dunedin, and took an active interest in promoting a knowledge of the New Zealand flora.

V. Matthewsii is a spreading bush, two feet to four feet in height and as much in diameter. The oblong, or elliptic-oblong leaves, three-quarters- to one-and-a-half-inch long, and one-third to two-thirds-of-an-inch broad, are sessile, closely and formally arranged on the branches. They are entire, thick and coriaceous in texture. The racemes of white or purplish-white flowers, two to four inches long, grow from the axils of the leaves towards the ends of the branches. The individual blooms are one-quarter to one-third-of-an-inch in diameter.

It is readily increased by cuttings and produces seeds freely. *A. O.*

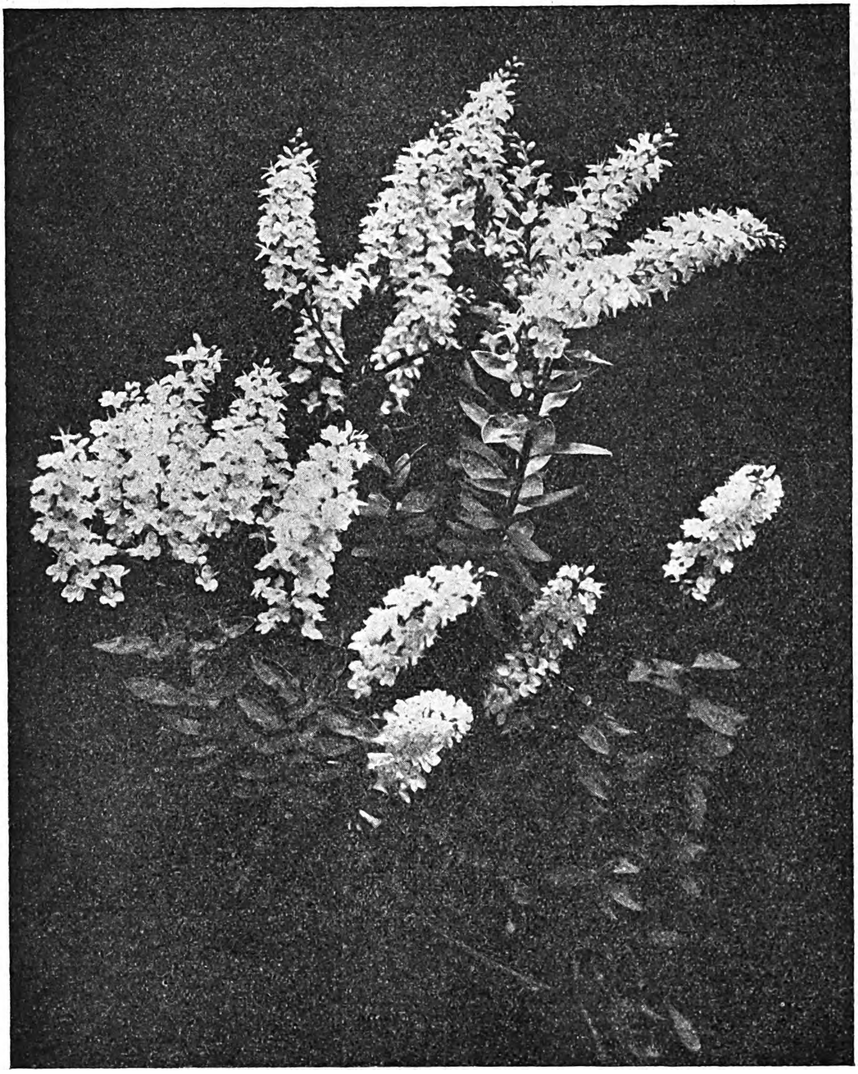

FIG. 56.—VERONICA MATTHEWSII.

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EUCRYPHIA CORDIFOLIA.

The Supplementary Illustration accompanying this issue depicts a specimen of Eucryphia cordifolia, growing in the gardens of Lieut.-Col. L. C. R. Messel, O.B.E., at Nymans, Handcross, Sussex. The tree was planted in 1905, when about one-and-a-half foot in height, and grew away freely from the start, flowering for the first time when about ten feet in height. In 1916 it was eighteen feet high, and about eight-and-a-half feet through. In its earlier stages protection was afforded each winter by a "wigwam" of poles and mats left open on the sunny side.

The illustration is from a photograph taken in 1926 when the tree was again measured, its height being thirty-one feet and its spread ten-and-a-half feet. The specimen flowers freely, being usually covered each year in August with its snowy white blossoms, and it is probably the largest tree of its kind in this country.

In Sussex the seeds require fifteen months to mature; it follows, therefore, that the still tender capsules are exposed to the frosts of winter and are often partially or wholly destroyed when the winter is exceptionally severe. The seeds drop out of the expanded husks in November and if sown in a temperature of 50° to 60° they germinate readily. Having raised many hundreds, we know that there is considerable variation in the constitution, hardiness and growth of individuals raised from seeds; some are inclined to be bushy, while others at once assume a tree-like habit.

The specimen illustrated was one of the parents of Eucryphia × Nymansay (A.M., R.H.S., 1924; F.C.C. and Cory Cup, 1925). As a large plant of Eucryphia pinnatifolia was growing near, the fondness of honey bees for the pollen and nectar probably brought about the cross and gave us this beautiful natural hybrid.

Writing of the species generally Mr. W. J. Bean, in *Trees and Shrubs Hardy in the British Isles*, states, "More tender than E. pinnatifolia, this species has never obtained a good footing in gardens, and is only adapted for places where the conditions are favourable." He also mentions that it attains an height of thirty feet or more in its native habitat.

According to recent exploration in the Andes, this would appear to be a very modest estimate. The smaller illustration (Fig. 57) is from a photograph—taken by my son, Mr. H. F. Comber, during his first expedition to the Andes—of a tree about ninety feet in height, growing at an altitude of 1,500 feet. During the second expedition, just completed, it was proved that even the above dimensions are by no means exceptional, as trees with trunks three feet to four feet in diameter, and from 90 feet to 120 feet in height, were found at the more usual elevation of 1,000 feet where this species forms half the forest. It is also the chief honey-producing plant, the product being sweet, and of good flavour.

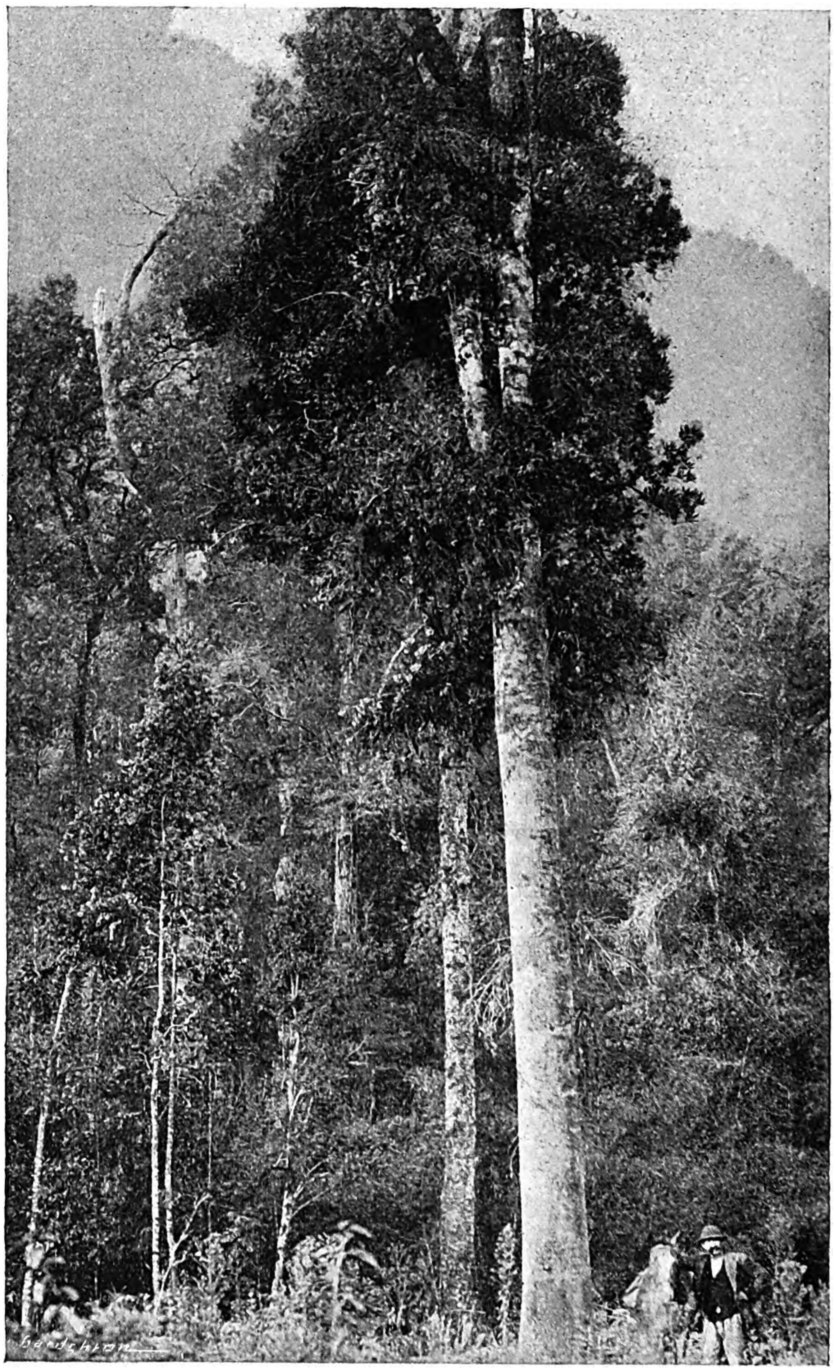

FIG. 57.—EUCRYPHIA CORDIFOLIA.
A specimen about 90 ft. in height; from a photograph taken by Mr. H. F. Comber during his 1925–26 Andean Expedition.

The timber, hard and durable, is chiefly used for firewood, because it is not so easily worked as that of Nothofagus procera and N. obliqua. *J. Comber, Nymans Gardens, Handcross.*

DIALYSIS OF CALYSTEGIA SEPIUM.

At the present time the Bindweed of the hedges is highly conspicuous for its large, funnel-shaped blooms, white flowers and pink ones occasionally appearing in similar situations. I have specimens in which the constituent parts of the corolla have become separated, more or less, from one another.

In one case the corolla is divided to the middle in two unequal pieces; in another case it is divided into three unequal pieces, almost to the base. A third flower has all five original petals separated to within one-quarter-inch of the base. This is comparable in a measure to the flowers of Campanula rotundifolia soldanellaeflora, but in that case the dialysis is fixed or permanent. These erratic flowers of Calystegia were gathered by Miss Willmott, on ruins, at Chester, probably the ruins of St. Peter's Church, but this condition may only be occasional, as it is uncommon. *J. F.*

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

The words "Average," "Over," or "Under," as the case may be, indicate the amount of the crop; and "Good," "Very Good," or "Bad," denote the quality.

Fuller comments will be given in the following numbers. See also Leading Article on page 121.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
Scotland, N.										
MORAYSHIRE	Under ; bad	Under ; bad	Under ; bad	Under ; bad	....	Under	Under	Average	....	John Macpherson, 4, Hawthorn Road, Elgin.
	Under	....	....	....	....	....	....	Under	....	James Jamieson, Easter Elchies, Craigellachie.
SUTHERLANDSHIRE ...	Under ; good	Under	Under ; good	Over ; good	....	....	Under	Average	....	W. F. Game, Dunrobin Castle Gardens, Golspie.
Scotland, S.E.										
BERWICKSHIRE	Under	Under	Under	Under	Under	Under	Average	....	....	Walter Richardson, Milne Graden Gardens, Coldstream.
PEEBLESHIRE	Under ; bad	Under ; bad	Under ; good	Under ; bad	....	....	Average ; good	Under	....	John Finnie, Stobo Castle Gardens, Stobo.
ROXBURGHSHIRE........	Average ; good	Under ; bad	Under ; bad	Under ; bad	Over ; very good	....	Average ; good	Over ; very good	....	Alexander Black, Ancrum House Gardens, Ancrum.
Scotland, E.										
ABERDEENSHIRE	Under	Under	Under	Under	....	....	Under	Under	....	Simon Campbell, Fyvie Castle Gardens.
	Under ; bad	Under ; bad	Under ; bad	Under ; bad	....	....	Under ; bad	Under ; bad	....	James Grant, Rothienorman Gardens.
	Under ; bad	Under ; bad	Under ; good	Under ; bad	Average ; good	....	Under ; good	Average ; good	....	John McKinnon, Haddo House Gardens.
BANFFSHIRE..............	Under	Under	Under	Under	....	....	Under ; bad	Average	....	George Edwards, Ballindalloch Castle Gardens.
FIFESHIRE	Average	Under	Under	Average	....	....	Average	Average	....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss.
	Under	Under	Under	Average ; good	Under	Under	Average ; good	Average ; good	....	D. McLean, Raith Gardens, Kirkcaldy.
FORFARSHIRE	Average	Under	Under	Under	....	....	Under ; good	Under ; good	....	Donald McInnes, Glamis Castle Gardens.
	Under	Under	Under	Average	....	....	Average	Average	....	David Milne, Baldovan Gardens, by Dundee.
	Average ; good	Under ; good	Under ; bad	Under ; good	Under ; good	....	Under ; good	Average ; good	....	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Under	Under	Under ; bad	Under ; bad	....	....	Under	Average ; good	....	David Boyle, Tay Park Gardens, Broughty Ferry.
	Under	Under	Average	Under	....	....	Average ; good	Average	....	J. B. Peffers, Panmure Gardens, Carnoustie.
	Under ; bad	Under ; good	Under ; good	Over ; very good	....	....	Over ; very good	Average ; good	....	Gavin Brown, Craigo House Gardens, by Montrose.
KINCARDINESHIRE	Under ; good	Under ; bad	Average ; good	Average	....	....	Under	Average	....	William Thomson, Ury House Gardens, Stonehaven.
MIDLOTHIAN..............	Under	Under	Under	Average	....	Under	Average	Over	....	William Crighton, Morton Hall Gardens, Liberton.
PERTHSHIRE..............	Under ; bad	....	Under	Under ; good	....	....	Average ; very good	Average ; good	....	Jas. Tunstall, Keir Gardens, Dunblane.
	Under ; bad	Under ; bad	Under ; bad	Average ; good	Under ; good	....	Average ;	Over ; good	....	J. Walpole, Drummond Castle Gardens, Crieff.
	Under	Under	Under	Over	Under	Under	Average	Average	....	James McGregor, Rossie Priory Gardens, Inchture.
Scotland, W.										
ARGYLESHIRE	Under ; bad	Under ; bad	Under ; bad	Average ; good	....	....	Average	Under ; bad	....	D. S. Melville, Poltalloch Gardens, Kilmartin.
AYRSHIRE	Under	Under	Under	Under	Average ; good	Under	Average ; very good	Average ; very good	Under	D. Buchanan, Bargany Gardens, Dailly.
	Under	Under ; good	Under	Under	Under	....	Over	Under	....	A. T. Harrison, Culzean Gardens, Maybole.
BUTESHIRE	Under ; bad	Under ; bad	Under ; bad	....	Average ; good	....	Average ; good	Under ; bad	....	J. Davidson, Ardencraig Gardens, Rothesay.
DUMBARTONSHIRE ...	Under	Under	Under	Under	....	....	Under ; good	Average ; good	....	John Brown, Cairndhu Gardens, Helensburgh.
DUMFRIESSHIRE	Under	Under ; bad	Under	Under	....	....	Under	Under	....	James McDonald, Dryfeholm Gardens, Lockerbie.
STIRLINGSHIRE	Under	Under	Under	Over ; good	....	....	Over ;	Over ; good	Under	D. Cunningham, Duntreath Castle Gardens, Blanefield.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND										
England, N.E.										
DURHAM	Under; good	Average; good	....	Average; good	....	....	Average; good	Average; good	....	Thomas Hedman, Ravensworth Castle Gardens, Gateshead-on-Tyne.
	Average; very good	Under; bad	Average; good	Over; good	....	....	Over; very good	Under; bad	....	J. A. Woods, Beamish Park Gardens, Beamish, S.O.
NORTHUMBERLAND	Under; good	Under; good	Under; bad	Average; good	....	Under	Under; good	Average; good	....	William McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.
	Under; bad	Under; bad	Under; bad	....	....	....	Average; good	Average; good	....	J. Winder, Howden Dene Gardens, Corbridge-on-Tyne.
YORKSHIRE	Average	Under	Under	Average	Average	Under	Average	Over	....	John Turton, Sowerby House Gardens, Bridlington.
	Average; good	Average; good	Under; good	Under; good	....	....	Over; very good	....	....	W. H. Bolton, 8, Ash Grove, Beverley Road, Hull.
	Under; good	Under; good	Under; good	Average; good	Average; good	....	Over; very good	Average; good	Under	J. S. Coates, Dalton Hall Gardens, Beverley.
	Under; good	Under; good	Under; bad	Over; good	....	Under; bad	Over; good	Average; good	....	Jas. E. Hathaway, Baldersby Gardens, Thirsk.
	Average	Average	Under	Average	....	....	Average; very good	Average; good	....	A. Dryden, Field House Gardens, Triangle, Halifax.
	Under; good	Under; good	Under	....	....	....	Over; very good	Under; good	....	J. G. Wilson, New Millerdam, Wakefield.
England, N.W.										
LANCASHIRE	Over; good	Under; good	....	Average	Over; good	....	Average good	Average; good	....	W. B. Upjohn, Worsley Hall Gardens, Worsley, Manchester
England, E.										
CAMBRIDGESHIRE	Under; good	Average; good	Under; good	Average; very good	Under; good	Under; good	Over; very good	Average; very good	Over; good	T. Spooner, Whitcroft, Meldreth, Royston.
	Under; good	Under; bad	Under; good	....	Under; good	....	Average; good	Average; bad	Under; good	Charles Ralph, Kneesworth Hall Gardens, Royston.
ESSEX	Average; good	Average; good	Under	Average	Average	Under	Average; good	....	....	Arthur Bullock, Copped Hall Gardens, Epping.
	Average; very good	Under; good	Average; good	Average	Over; very good	Average	Average; good	Under; bad	Under; bad	Charles A. Heath, Morleys, Great Hallingbury, Bishop Stortford.
	Over; very good	Over; very good	Average; good	Average; good	Under; very good	Under; bad	Over; very good	Under; bad	Average; good	W. T. Franklin, Little Laver Hall Gardens, Harlow.
	Under; good	Under	Under	Average	Average	Under	Under	Under	Under	John Dewhurst, Gilston Park Gardens, Harlow.
	Average; good	Under; good	Under; bad	Under; good	Under; good	Under; bad	Average; good	Under; bad	Under; good	C. Wakely, East Anglian Institute, Chelmsford.
HUNTINGDONSHIRE	Average	Under	Under	Average	Average	Under	Under	Under	Under	James Hewitt, Castle Gardens, Kimbolton.
	Average; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; very good	Under; good	Under	Guy S. Aubertin, Conington Castle Gardens, Peterborough.
LINCOLNSHIRE	Over; very good	Under; good	Average; good	Under; bad	Under; bad	....	Over; very good	Average; good	Under	Alexander M. Warnes, Highfield House Gardens, Gainsborough.
	Under; good	Under; good	Under; good	Average; good	....	Under	Over; good	Average; bad	....	Thomas Cox, Hainton Hall Gardens, Lincoln.
	Average; good	Under	Under	Average	Average	Under	Over; good	Under; bad	Under	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Average; good	Under; good	Under; bad	Average; good	Under; good	....	Over; very good	Average; good	....	A. E. Jackson, Normanby Park Gardens, Scunthorpe.
	Under	Under	Under	Average	Average	Under	Average	Average	....	J. F. Vinden, Harlaxton Manor Gardens, Grantham.
NORFOLK	Under; bad	Under; good	Under; bad	Under; good	Over; very good	Under; good	Under; good	Under; bad	Average; good	G. Barrell, Merton Hall Gardens, Watton.
	Under; good	Under; good	Average; very good	Average; good	Under; good	Under; bad	Average; good	Under; bad	Under; good	C. G. Nichols, The Manor House Gardens, Gt. Ormesby.
	Average; good	Under	Average; good	Under	....	....	Under; good	Under; bad	Under	J. Johnson, Catton House Gardens, Norwich.
SUFFOLK	Average; good	Under; good	Under; good	Under; bad	Average; good	....	Over; very good	Under; bad	....	James Bumstead, Glenham Hall Gardens, Wickham Market.
	Under	Average	Under	Average	Average	....	Under	Average	....	A. E. Sales, Flixton Hall Gardens, Bungay.
	Average; good	Under; bad	Under; good	Under; good	Under; bad	Under; bad	Over; very good	Under; good	Under; bad	F. J. Bullen, Assington Hall Gardens, Assington, Colchester.
	Average; good	Under; good	Average; good	Over; good	Average; good	Under; good	Average; good	Under; good	Average	A. K. Turner, Orwell Park Gardens, Nacton, Ipswich.
	Under	Under	Under	Average	....	....	Under	Under	....	E. G. Creek, County Horticultural Instructor, Bury St. Edmunds.
	Under; good	Under; good	Under; good	Under; bad	....	Under; good	Under; good	Under; bad	....	H. Coster, Ickworth Gardens, Bury St. Edmunds.

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
Midland Counties.										
BEDFORDSHIRE	Over ; very good	Under	Average ; good	Average	Over ; very good	Under	Over ; very good	Under	Average	W. G. Warner, Chicksands Priory Gardens, Shefford.
	Average ; good	Under	Under ; good	Average ; good	....	....	Average ; good	Under ; bad	Average ; good	Chas. Turner, Ampthill Park Gardens, Ampthill.
BUCKINGHAMSHIRE ...	Under ; good	Under ; good	Under ; good	Average ; good	Under	Under	Average ; good	Under ; bad	Average ; good	W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.
	Under	Under	Under	Under	Average	Under	Average	Under	Under	James Wood, Hedsor Park Gardens, Bourne End.
	Under ; bad	Under ; bad	Under ; bad	Average ; bad	Average	....	Average ; good	Average ; good	Under	William Brooks, Abbey Gardens, Great Missenden.
	Average ; very good	Under ; good	Average ; good	Average ; very good	Average ; good	Under ; bad	Over ; good	Under bad	Average	G. Humphrey, Finefield Gardens, Bath Road, Slough.
	Average ; good	Under	Average ; good	Over ; very good	Average	....	Average ; very good	Average ; very good	Average ; good	Albert Adams, Ridgeway, Bledlow Ridge, West Wycombe.
	Over ; good	Under ; good	Under ; bad	Average good	Under	....	Over ; good	Under	Under	F. J. Clark, Woburn Abbey Gardens, Bletchley.
	Average	Average	Over	Over	Under	Under	Over	Over	....	W. A. Bright, Hughenden Manor Gardens, High Wycombe.
	Under	Under	Under	Under	Average	Under	Average	Under	Average	Philip Mann, Education Sub-Office, Aylesbury.
	Over ; very good	Under ; bad	Average ; good	Average ; good	....	....	Over ; good	Under ; good	....	G. F. Johnson, Waddesdon Gardens, Aylesbury.
	Over ; very good	Under ; bad	Average ; good	Average ; good	Average ; good	Average ; good	Over ; good	Over ; very good	....	W. Camm, Cliveden Gardens, Taplow.
	Average ; good	Under ; good	Under	Under ; good	Under ; good	Under ; bad	Average ; good	Under ; bad	Under	F. Reid, Dropmore Gardens, Burnham.
	Average ; good	Under ; bad	Under ; bad	Average ; good	....	....	Under ; good	Under ; good	....	W. Turnham, Greenlands Gardens, Henley-on-Thames.
CHESHIRE	Over ; good	Under	Under	Under ;	....	....	Over ; good	Average	....	C. E. Ardern, Lymm, Cheshire.
	Average ; good	Under	Average ; good	Average ; good	Under	Average	Average ; good	Under	....	S. A. Summerfield, Alderley Park Gardens, Chelford.
	Average ; good	Average ; good	Under	Average	....	....	Average ; good	Average ; very good	....	James B. Allan, Tirley Garth Gardens, Tarporley.
DERBYSHIRE	Average ; good	Average ; very good	Under ; good	Under	....	Under ; good	Average ; good	Under ; good	Under	William Parks, Whittington Hall Institution, Chesterfield.
	Average	Under	Under ; bad	Average ; good	....	Under ; bad	Average ; good	Average ; bad	....	J. Maxfield, Darley Abbey Gardens, Derby.
	Average ; good	Average ; good	Under ; bad	Average ; good	....	....	Average ; very good	Average ; good	....	J. Tully, Osmaston Manor Gardens, Ashbourne.
HERTFORDSHIRE	Average ; good	Under ; bad	Average ; good	Average ; good	Under ; bad	....	Average ; over	Average ; good	....	Richard Steward, Ware Park Gardens, Ware.
	Average ; good	Under	Under ; good	Average ; good	Under	....	Average ; good	Under	Under	Geo. H. Hill, Caldecote House Gardens, Bushey Heath, near Watford.
	Average ; good	Under ; good	Under ; good	Average ; good	Under	Under	Average ; good	Under ; bad	Under	Edwin Beckett, Aldenham House Gardens, Elstree.
	Average	Average	Average	Average	Average	....	Over	Average	Average	Wm. Jas. Penton, The Node Garden, Welwyn.
	Average ; good	Under	Under	Under	Under	Under	Average	Average	....	William Stephenson, Hyde Hall Gardens, Sawbridgeworth.
	Average ; very good	Average ; very good	Under ; good	Average ; good	Under ; good	....	Average ; very good	Under ; bad	....	T. Pateman, Brocket Hall Gardens, Hatfield.
	Under ; bad	Average ; very good	Under ; good	Average ; good	Under ; good	....	Over ; very good	Under ; good	....	A. J. Hartless, King's Walden Bury Gardens, Hitchin.
LEICESTERSHIRE	Under ; good	Under	Under ; very good	Under ; very good	Average ; good	Under	Average ; good	Average ; very good	Under	A. H. Campin, Whetstone Pastures Gardens, near Leicester.
	Average ; good	Under ; bad	Under ; good	Under ; good	....	Under	Average ; good	Average ; good	Under	Wm. R. Scott, Ratcliffe Hall Gardens, Ratcliffe-on-Wreake.
	Under ; good	Under ; good	Under ; good	Average ; very good	Under ; good	....	Over ; very good	Average ; good	....	M. L. Garrett, Misterton Hall Gardens, Lutterworth, near Rugby.
	Under	Under	Under	Under ; bad	Average ; good	Under	Average ; good	Average ; good	....	David Thompson, Whatton Gardens, Loughborough.
	Average ; good	Under	Under ; good	Average	Under	....	Over ; good	Average ; good	....	W. Coe, Prestwold Gardens, Loughborough.
	Under	Under	Under	Under	Under	Under	Average	Under	....	F. Ibbotson, Rolleston Hall Gardens, Billesdon.
NORTHAMPTONSHIRE	Under ; bad	Under ; bad	Average ; good	Average ; good	....	....	Over ; good	Average ; god	Under ; bad	Alfred Child, Catesby House Gardens, near Daventry.
	Under	Under	Under	Average	Average	Under	Over ; good	Under ; bad	Under	F. W. Gallop, Lilford Gardens, Barnwell, Peterborough.
	Average ; good	Under ; bad	Under ; bad	Average ; good	Under ; good	Under ; bad	Average ; good	Average ; good	Under ; bad	Arthur R. Searle, Castle Ashby Gardens, Northampton.

CONDITION OF THE FRUIT CROPS—(*continued.*)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NOTTINGHAMSHIRE ...	Under	Under	Under	Under	Under	Under	Average	Under ; bad	Under	S. Barker, Clumber Gardens, Worksop.
	Average ; very good	Under ; good	Under ; bad	Over ; very good	Over ; very good	....	Over ; good	Average ; good	....	C. H. Cooper, Blyth Hall Gardens, Blyth, nr. Rotherham.
OXFORDSHIRE............	Under ; good	Under ; good	Under ; good	Under ; good	Under ; good	Under ; good	Under ; good	Under ; good	....	Samuel Heaton, 38, Botley Road, Oxford.
	Under ; good	Under ; very good	Under ; good	Under bad	Under ; bad	Under ; very good	Under ; good	Under ; very good	....	T. W. Whiting, Shotover Park Gardens, Wheatley.
	Under ; good	Average	Under	Under	Average	Under	Average	Average	Under	Ben Campbell, Cornbury Park Gardens, Charlbury.
	Over	Average	Under	Under	Over	Average	Over	Over	Under	B. Elkington, Bury Cottage, nr. Banbury.
	Average ; good	Average ; good	Average ; good	Average good	Average ; good	....	Average ; very good	Average ; good	....	Victor Gammon, Eynsham Hall Gardens, Witney.
STAFFORDSHIRE.........	Average ; good	Under ; bad	Under ; bad	Under ; bad	....	....	Average ; good	Average ; good	Under	J. W. Miskin, Woodseat Gardens, Rocester.
	Average ; good	Average ; good	Average ; good	Average ; good	....	Under ; bad	Average ; good	Under ; good	Average ; good	E. Bannerman, Blithfield Gardens, Admaston.
	Average ; good	Under ; good	....	Under ; bad	....	....	Over ; very good	Average ; good	....	W. R. Phillips, Tittensor Chase Gardens, Tittensor, Stoke-on-Trent.
	Under	Under	Under	Under	Under	Under	Average	Average	Average	Edwin T. Gilman, Hillside, Rugeley.
	Average ; good	Under ; bad	Under ; bad	Average ; bad	Average ; good	Under ; good	Average ; good	Average ; bad	....	T. G. Cheney, Shenstone Moss Gardens, nr. Lichfield.
WARWICKSHIRE..........	Under ; very good	Under ; bad	Under ; very good	Under ; bad	Under ; bad	Under ; bad	Average ; good	Average ; very good	Under ; bad	Charles Marchment, Moreton Hall Gardens, Moreton Morrell.
	Under	Under	Under	Under	....	Under	Over ; very good	Under ; bad	Under	Burton Gaiger, Wellesbourne House Gardens, Warwick.
	Under good	Under ; good	Under ; good	Under ; bad	Under ; bad	Average ; bad	Average ; good	Under ; bad	Under ; good	H. Dunkin, 86, Emscote Road, Warwick.
	Under ; good	Under ; good	Under ; good	Under ; bad	Average ; good	....	Under ; good	Under ; bad	Under ; bad	A. E. Moss, Billesley Manor Gardens, Alcester.
	Average	Under	Under	Over	Over	....	Over	Under	....	James Page, Moreton Paddox Gardens, Warwick.
	Average ; good	Under ; good	Under ; good	Average ; very good	Average ; very good	Under ; good	Over ; very good	Average ; good	Under	J. W. Brown, Newnham Paddox Gardens, Rugby.
	Average ; good	Under ; good	Under ; bad	Average ; good	Under ; bad	Under ; good	Average ; good	Under ; bad	....	H F. Smale, Warwick Castle Gardens.
	Over ; good	Under ; good	Average ; good	Over ; very good	Under ; good	....	Over ; very good	Average ; good	Under	J. S. Buckby, Bilton Grange Gardens, Rugby.
	Under ; bad	Under ; bad	Under ; bad	Under ; bad	....	....	Average ; good	Under ; bad	Under	Chas. Harding, Ragley Gardens, Alcester.
England, S.										
BERKSHIRE	Over good	Average ; good	Average ; good	Over ; very good	Average ; good	....	Over ; very good	Average ; very good	Average ; good	Stanley R. Gammon, Farley Court Gardens, Farley Hill. Reading.
	Under ; bad	Under ; good	Average ; good	Average ; good	....	....	Over ; good	Under ; bad	Under	Edward Harriss, Lockinge Gardens, Wantage.
	Average good	Under	Average ; good	Under	Under	Under	Average ; good	Average ; very good	Under	J. Kitt, Wasing Place Gardens, Aldermaston, nr. Reading.
	Under ; good	Average ; good	Under ; good	Under ; good	Under ; good	Average; good	Average ; good	Under ; bad	....	A. B. Wadds, Englefield Gardens, Reading.
	Over ; good	Average	Average	Average ; good	Under	Under	Average ; good	Under ; bad	Average	Henry Butcher, Wyld Court Gardens, Hampstead Norris, Newbury.
	Average ; good	Under ; good	Under ; good	Average ; good	Average ; good	Under ; good	Over ; very good	Under ; bad	Under ; bad	Geoffrey Cooper, Ranworth, Malvern Road, Furze Platt, Maidenhead.
	Average ; very good	Average	Under	Under	Average	Under	Average	Under	Under	Thomas Wilson, Castle Gardens, Wallingford.
DORSETSHIRE	Average	Under	Under	Over	Average	....	Over	Under	....	A. Booth, Down House Gardens, Blandford.
	Under ; good	Under ; good	Under ; good	Under ; good	Average ; very good	Under ; good	Average ; very good	Under ; good	Average ; good	Henry F. Maidment, Crichel Estate Gardens, Wimborne.
	Under ; very good	Under ; bad	Under ; bad	Average ; good	Over ; good	....	Under ; good	Under ; bad	Under	W. E. Axford, The Gardens, St. Giles.
HAMPSHIRE	Over ; very good	Under ; good	Average ; good	Average ; very good	Under ; good	....	Over ; very good	Under ; good	Under	George Ellwood, Swanmore Park Gardens, Swanmore.
	Over ; very good	Under ; good	Under ; good	Average	Under ; good	....	Over ; good	Under	Under ; good	George Summersell, Buriton House Gardens, Petersfield.
	Over ;good	Average ; good	Average ; good	Over ; good	Under ; bad	Average ; good	Over ; very good	Average ; good	Under	A. J. Legge, Dogmersfield Park Gardens, Winchfield, Basingstoke.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
HAMPSHIRE............ (Continued)	Average; under	Average; bad	Average; bad	Average	Average	Average; bad	Average	Average; bad	Average; bad	Frederick Gooch, Bossington House Gardens, Houghton, Stockbridge.
	Average; good	Under; good	Average; good	Under; good	Under; good	....	Average; good	Under; good	....	W. G. Osborne, Sutton Manor Gardens, Sutton Scotney.
KENT	Under	Under	Average	Under	Under	....	Average	Average	Average	J. George Woodward, Barham Court Gardens, Teston, Maidstone.
	Average; good	Under; good	Under; very good	Average; very good	Average; good	....	Over; very good	Under; bad	Under; bad	T. Cain, The Cottage, Dashwood, Gravesend.
	Average	Under	Average	Under	....	....	Under	Average	Under	George Lockyer, Mereworth, Maidstone.
	Over; good	Under	Under	Average; good	Average	....	Over; good	Under; good	Under	Edward A. Bunyard, Allington, Maidstone.
	Under	Under	Under	....	....	....	Over	Average	....	Charles E. Shea, The Elms, Foot's Cray.
	Average	Under	Under	Average	Under	Under	Average	Under	....	John Thomas Shann, Betteshanger Park Gardens, Eastry.
	Average; good	Under; good	Under; bad	Under; good	Average; good	Average; good	Average; good	Under; bad	Average; good	James Mayne, 32, Wigtown Road, Eltham.
MIDDLESEX	Over; good	Average	Under	Average; good	Average	....	Average; good	Average	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Average; very good	Under; very good	Under; bad	Under; good	....	....	Average; very good	Under; bad	....	James A. Paice, Sunnyfields Gardens, Mill Hill, N.W. 7.
	Average; good	Under; good	Under	Average; good	....	....	Under; good	Under; bad	....	Geo. H. Head, Fulwell Park Gardens, Twickenham.
SURREY	Over; very good	Under; bad	Under; good	Average: good	Over; very good	....	Over; very good	Average; good	Under; bad	H T. Weston, Hatchford End Gardens, Cobham.
	Average; very good	Under; good	Average; very good	Over; good	Under; bad	Under	Over; very good	Average; good	Average; good	Will Tayler, Peace, Godalming.
	Under; good	Under	Under	Under; good	....	....	Average; very good	Average; good	Average	W. Everatt, Burford Gardens, Dorking.
	Under; good	Under; good	Under; good	Average	Under; good	Under	Average; good	Under; good	....	Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham.
	Average; good	Under	Under	Average	Average	Under	Average; good	Under	Average	J. Collier, Gatton Park Gardens, Reigate.
	Over; good	Over; good	Over; very good	Average; good	Average; bad	....	Over; very good	Under; bad	Average; good	James M. Grant, Grayswood Hill Gardens, Haslemere.
	Average; good	Under; good	Average; very good	Average; good	Average; good	Under	Average; good	Under; bad	Under; good	F. Jordan, Ford Manor Gardens, Lingfield.
	Under	Under	Under	Over	Over	Under	Over	Under	Under	G. Carpenter, West Hall Gardens, Byfleet.
	Over; very good	Average; good	Under; good	Under; good	Under	....	Over; very good	Average; good	Average; very good	John H. Shipley, Haling Park Gardens, South Croydon.
	Over; good	Under	Average; good	Average; good	Under	Under	Average; good	Under	....	O. Maddock, Ham House Gardens, Richmond.
	Average; good	Under	Average; good	Over; very good	Average; very good	....	Average; very good	Under; good	Average; good	Stephen E. Harling, Holmdale Gardens, Holmbury St. Mary, Nr. Dorking.
	Average; very good	Under; good	Under; good	Average; good	Average; very good	Average; good	Over; very good	Under; good	Under good	Alan N. Rawes, R.H.S. Gardens, Wisley, Ripley.
	Average; good	Under; good	Under; good	Under; bad	....	....	Average; good	Under; bad	Under	G. E. Twinn, Polesden Lacey Gardens, Dorking.
SUSSEX	Over; very good	Average; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Average; good	Under; bad	F. Streeter, Petworth Park Gardens, Petworth.
	Over; good	Average; good	Average; good	Over; very good	Under; bad	Average; good	Average; very good	Over; very good	....	John W. Dickinson, Castle Gardens, Arundel.
	Over; good	Under; good	Under; good	Average; good	....	....	Average; good	Under; good	Under	E. M. Bear, Magham Down, Hailsham.
	Average; good	Under; good	Under	Average	Under	Under	Over; very good	Under	Under	H. E. Kemp, Holmwood Gardens, Langton Green, Tunbridge Wells.
	Average; good	Average; good	Average;	Average; good	Average;	Under	Average; good	Under; bad	Average	A. Wilson, Eridge Castle Gardens, Tunbridge Wells.
	Over; good	Average; good	Over	Average;	Average; good	....	Over; good	Average	....	E. Markham, Gravetye Manor Gardens, East Grinstead.
	Average; good	Under; good	Average; good	....	Average; good	....	Average; good	Under; bad	....	W. H. Smith, West Dean Gardens, Chichester.
	Over	Over	Average	Over	Under	....	Over	Under	....	E. Neal, Tilgate Gardens, Crawley.
	Average; good	Over; very good	Average; good	Over; good	Under; good	Average; good	Over; good	Under; good	Under; bad	T. E. Tomalin, Stansted Park Gardens, Emsworth.
WILTSHIRE	Under; good	Under; good	Average; good	Average	Under	....	Average; very good	Under; good	Under	M. A. Mason, Strangeways Gardens, Calne.
	Average; good	Average; good	Under	Over; good	Average; good	Under	Over	Under; bad	Average	S. W. Tucker, Longford Castle Gardens, Salisbury.
	Average; good	Under; good	Average; good	Average	Average; good	....	Average; very good	Under	....	Henry Penfold, Greenhill Gardens, Warminster.
	Under; good	Average; very good	Under; good	Average; good	Over; very good	Under	Under; bad	Under; bad	Average	H. H. Mills, Fonthill House Gardens, Tisbury.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
England, N.W.										
WESTMORLAND.	Under; good	Under	Under	Average	Average; good	....	Under; good	Under	....	Robert Dacre, Underley Gardens, Kirkby Lonsdale.
	Average; good	Under	Average; good	Under; bad	Under; bad	....	Over; good	Average; good	....	Jas. Jeffrey, Lowther Gardens, Penrith.
England, S.W.										
CORNWALL	Average; good	Over; good	Under; good	Over; good	Over; good	....	Over; good	Under; bad	....	Harry Williams, Tolvean Gardens, Redruth.
	Under	Under	Average	Over	Under	....	Over; very good	Under; bad	....	A. E. Meredith, Cotehele Gardens, St. Dominick.
DEVONSHIRE	Average; good	Under; good	Average; good	Over; good	Average; good	Under; good	Over; good	Under; bad	Average; good	E. E. Bristow, Castle Hill Gardens, Barnstaple.
	Average; good	Under; bad	Under; good	....	....	....	Average; good	Under; bad	....	J. A. Stidston, Bishopsteignton, Teignmouth.
	Under; good	Average; good	Under; bad	Under; bad	Average; good	....	Average; good	Average; good	....	Thomas H. Bolton, Hartland Abbey Gardens, Hartland.
	Average	Average	Average	Average	Under	Under	Over	Under	Average	P. C. M. Veitch, Royal Nurseries, Exeter.
SOMERSETSHIRE	Average; good	Under; good	Average; good	Average; good	Average; good	Under; good	Average; very good	Under; good	Under; good	James Glasheen, Hestercombe Gardens, Taunton.
	Average; good	Under; good	Over; very good	Under; good	Average; good	Under	Over; very good	Under; bad	Over; good	William Mackay, Kingweston Gardens, Taunton.
	Average; good	Under; good	Under	Average; good	Average; good	Average; good	Average; very good	Under; bad	Average	J. Yandell, Halswell Park Gardens, Bridgwater.
GLOUCESTERSHIRE	Average; very good	Over; very good	Average; good	Under; good	....	....	Over; very good	Average; very good	....	John Ettle, 201, Henleage Road, Westbury-on-Trym, Bristol.
	Over; very good	Average; good	Average; very good	Over; good	Average; good	Under	Over; very good	Under; good	....	W. I. Mitchell, Westonbirt Gardens, Tetbury.
	Over; good	Under; good	Average; good	Under; bad	Average; good	Under; good	Over; very good	Average good	....	S. W. Dance, Williamstrip Gardens, Fairford.
	Average; good	Average good	Over; good	Average; good	Average; good	....	Over; good	Under	Under	John Benting, Tortworth Gardens, Falfield.
	Under	Under	Under	Average	....	....	Average	Under	....	Wm. J. Jefferies, Royal Nurseries, Cirencester.
	Under; good	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Under; bad	Average;	G. H. Hollingworth, Shire Hall, Gloucester.
	Under; good	Average; good	Under; good	Under; bad	Under; good	Under; good	Average; good	Under; bad	Under; bad	Geo. H. Emmett, Lydney Park Gardens, Lydney.
HEREFORDSHIRE	Average; good	Under; good	Under; good	Under;	Average; very good	Under;	Over; very good	Average; good	Under	J. B. Cooke, Ledbury Park Gardens, Nr. Hereford.
	Under; bad	Average; good	Under	Average; very good	Average; good	Under; bad	Average; very good	Under; good	Under; bad	F. Roberts, Stoke Edith Park Gardens, Hereford.
SHROPSHIRE	Over; very good	Average; very good	Average; good	Over; good	Under	Average; very good	Over; very good	Over good	Under	Roger F. Jones, Otley Park Gardens, Ellesmere.
	Under; very good	Under; very good	Under; very good	Over; good	....	Under; good	Average; very good	Average; very good	Under	George Robinson, Gannow Hill Gardens, Welsh Frankton, Nr. Oswestry.
	Over	Under	Over	Average	Over	Average	Over	Over	Under	William G. Rolfe, Gredington Gardens, Whitchurch.
	Under; good	Under	....	Under	Average; very good	Average	Average; good	Under good	....	A. Wardle, Loton Park Gardens, Alberbury, nr. Shrewsbury.
	Under; good	Under; good	Under; good	Average; good	Under; good	Average; good	Average good	Under; bad	Under;	E. F. Hazelton, Yeaton Peverey Gardens, Bomere Heath, Shrewsbury.
WORCESTERSHIRE	Average; good	Under; good	Average; good	Under; bad	Average; good	Average; good	Average; good	Under; bad	....	William Crump, Oakridge, Malvern Link.
	Under	Under	Average	Average	....	....	Over	Under	Under	Ernest Avery, Finstall Park Gardens, Bromsgrove.
	Average; good	Average; good	Under	Average; good	....	Under	Average; good	Average; very good	Under	John Melrose, Davenham Gardens, Malvern.
WALES										
CARDIGANSHIRE	Over; very good	Over; very good	Under; good	Over; good	Over; good	....	Average; very good	Under bad	....	W. Phillips, Derry Ormond Gardens, Llangybi.
CARNARVONSHIRE......	Average; very good	Average; good	Under; good	Under; good	....	....	Average; very good	Average; bad	....	J. E. Higgins, Glynllivon Gardens, Llanwnda.
DENBIGHSHIRE	Under; good	Under; good	Under	Under; good	Average	Under	Average; good	Average; good	Average	R. H. Crockford, Horsley Hall Gardens, Gresford, Nr. Wrexham.
	Average; very good	Under; good	Under; good	Average; good	Under; good	Under; good	Over; good	Under; good	Under; good	S. J. Robbins, Cafn Park Gardens, Wrexham.
	Average	Average	Under	Under	Average	Under	Average	Over	....	J. A. Jones, Chirk Castle Gardens, Chirk, Nr. Wrexham.
	Under	Under	Under	Average	Under	....	Average	Average; bad	....	F. C. Puddle, Bodnant Gardens, Taly-Cafn.

CONDITION OF THE FRUIT CROPS—(*continued.*)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
FLINTSHIRE	Under ; good	Under ; good	Under ; bad	Under ; very good	Under ; bad	....	Average ; good	Under ; bad	Average ; good	Harry L. Jones, County Education Offices, Mold.
	Under	Average	Under	Average	Over	Average	Over	Under	Average	J. L. Eversfield, Penbedw Hall Gardens, Nannerch.
GLAMORGANSHIRE......	Under ; good	Average ; good	Under ; good	Under ; good	Average ; very good	....	Over ; very good	Under ; bad	....	W. E. Wright, Tregarth Gardens, Creigiau, nr. Cardiff.
	Over ; good	Average	Under	Over ; good	Average	....	Over ; good	Average	....	C. T. Warrington, Penllergaer Gardens, Swansea.
MONTGOMERYSHIRE .	Average ; good	Under ; good	Under	Under	Average	Under	Over ; good	Average good	....	Wm. Durrant, Brookland Hall Gardens, Welshpool.
IRELAND										
Ireland, N.										
MEATH	Average	Under ; bad	Average ; very good	....	....	Average ; good	Average ; good	Average	....	Michael McKeown, Julianstown, Drogheda.
TYRONE	Average ; good	Under	Under	Under	....	....	Average	Average good	....	Fred W. Walker, Sion House Gardens, Sion Mills.
WESTMEATH	Under	Average	Average ; good	Under	....	Under ; bad	Over ; very good	Average ; good	Under	William Allan, Pakenham Hall Gardens, Castlepollard.
Ireland, N.E.										
DOWN	Average ; good	Average ; good	Average good	Average ; good	....	Under ; good	Under ; good	Average ; good	....	T. W. Bolas, Mount Stewart Gardens, Newtownards.
Ireland, S.										
CORK	Average ; good	Average ; good	Under ; good	Average ; good	....	....	Average ; good	Under ; bad	....	J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.
KILDARE	Average	Average	Under	Average	Under	Under	Over	Average ;	Average	Alexander Black, Carton, Maynooth.
KILKENNY	Average	Average	Under	Under	....	....	Over	Under	....	Henry Hall, Shankill Castle Gardens, Whitehall.
	Under ; good	Average ; very good	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	....	T. E. Tomalin, Bessborough Gardens, Piltown.
Ireland, W.										
GALWAY	Over ; very good	Average ; good	Average ; good	Average ; good	Over	....	Over ; very good	Over ; very good	Over ; very good	J. Chilcott, Lough Cutra Castle Gardens, Gort.
CHANNEL ISLANDS										
GUERNSEY	Average ; good	Average ; good	Under	Under	Under	....	Average ; good	Under ; bad	....	C. Smith & Son, Caledonia Nursery.
	Average	Under	....	....	....	....	Over	Under	......	W. Mauger & Sons, Brookdale Nurseries.
JERSEY	Over ; good	Under ; good	Under ; bad	Over ; good	Under ; bad	....	Average ; good	Average ; good	... .	Geo. Harper, Springfield Nursery, St. Heliers.
ISLE OF MAN										
CASTLETOWN	Average	Under	Under ; bad	Under	....	....	Average ; very good	Average ; very good	....	F. Large, Great Meadow Gardens.
DOUGLAS	Under ; good	Under ; good	Under	....	....	....	Average	Under ; bad	....	James Inglis, Peel Road Nursery.

SUMMARIES OF THE HARDY FRUIT CROPS.

SCOTLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	30	28	29	28	10	6	29	29	2
Average	4	—	2	7	3	—	14	16	—
Over	—	—	—	4	1	—	3	4	—
Under	26	28	27	17	6	6	12	9	2

ENGLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	170	170	166	164	129	93	170	168	101
Average	81	39	52	86	60	20	84	61	31
Over	30	6	7	25	14	—	69	7	2
Under	59	125	107	53	55	73	17	100	68

WALES.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	11	11	11	11	10	5	11	11	4
Average	4	5	—	3	5	1	6	5	3
Over	2	1	—	2	2	—	5	1	—
Under	5	5	11	6	3	4	—	5	1

IRELAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	9	9	9	8	3	5	9	9	3
Average	6	7	5	5	1	2	4	6	1
Over	1	—	—	—	1	—	4	1	1
Under	2	2	4	3	1	3	1	2	1

CHANNEL ISLANDS.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	3	3	2	2	2	—	3	3	—
Average	2	1	—	—	—	—	2	1	—
Over	1	—	—	1	—	—	1	—	—
Under	—	2	2	1	2	—	—	2	—

ISLE OF MAN.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records .	2	2	2	1	—	—	2	2	—
Average	1	—	—	—	—	—	2	1	—
Over	—	—	—	—	—	—	—	—	—
Under	1	2	2	1	—	—	—	1	—

GRAND SUMMARY, 1927.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records...	225	223	219	214	154	109	224	222	110
Average	98	52	59	101	69	23	112	90	35
Over	34	7	7	32	18	—	82	13	3
Under	93	164	153	81	67	86	30	119	72

SUMMARY OF 1926 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	215	214	213	210	149	120	215	213	112
Average	43	112	93	77	87	43	121	113	50
Over	4	26	28	17	20	15	47	25	12
Under	168	76	92	116	42	62	47	75	50

NOTICE OF BOOKS.

A Bird Book.

Most gardeners must, at various times, have wished for a handy book which would enable them to readily identify some uncommon bird seen in the garden or woodlands. Quite a number of reliable books, dealing with British birds and containing good coloured illustrations, have long been in circulation, but for the most part, these are of the nature of library books, as well as being too expensive for the average gardener, who has but little more than a passing interest in the correct nomenclature of the feathered inhabitants and visitants of the garden.

It has remained for Mr. Edmund Sandars to supply the little bird book* so many of us have long needed.

In the preface to *A Bird Book for the Pocket*, he tells us that this book was written for his own use and published in the belief that others may need what he wanted, that is, a book small enough to be carried in the pocket, with a clear text, and accompanying drawings sufficiently accurate in outline and colouring to enable the bird so depicted to be readily recognised. In this Mr. Sandars has succeeded admirably.

The limitations of a book of pocket-size might have presented great difficulties in the matter of uniformity of illustrations, but Mr. Sandars has cleverly overcome this by drawing all the small birds at one-half natural size and the large birds at one-fifth their natural size. With the very large birds—the Swan, Gannet, Cormorant and the like—the head, neck and sufficient of the body for identification have been drawn at the one-fifth scale, accompanied by a small inset of the whole bird. These wholly admirable illustrations are on the same paper as the text and over two hundred birds are thus depicted.

There is also a valuable chapter on eggs, many of which are illustrated in colour. The necessary index, which has been compiled with care, contains many local and alternative names and a glossary of many technical terms used. In a footnote Mr. Sandars has thoughtfully given a short selection of obsolete sporting terms, which, as he states, are worthy of record for their picturesqueness alone. What could be more delightfully expressed than "A murmuration of Starlings," "An exaltation of Larks," "A building of Rooks," or "A dale of Turkeys?"

FRUIT REGISTER.

GOOSEBERRY LEVELLER.

This fine variety has always been regarded as one of the "big" Gooseberries, and Dr. Hogg, in his *Fruit Manual*, states that in 1864 individual fruits reached the weight of 30 dwt. 11 gr. It is, of course, a splendid show Gooseberry, but fortunately it is more than that and has increased in popularity because of its free-setting habit and regular and abundant cropping. At one of the recent meetings of the Royal Horticultural Society, Mr. J. C. Allgrove exhibited a wonderful collection of Gooseberries, including many well-grown plants showing the habit and cropping capacity of the varieties. Few, if any, of the plants attracted more attention than those of Leveller, one of which is illustrated in this issue (Fig. 58, p. 139).

The fruits of Leveller are naturally large and if the crop is thinned when the berries are green and just large enough for culinary purposes, the remaining fruits will reach a large size and become useful for dessert. The fruits are yellowish-green when ripe, of fine shape and very good flavour, and although a trace of downiness is found on some of them, they are practically smooth.

Ripe fruits of Gooseberry Leveller have recently been placed on the market in considerable quantities, and their attractiveness in shop windows and on fruit stalls has drawn attention to a commodity that is at once cheap and good. This should stimulate the cultivation of dessert Gooseberries in small private gardens, and novices who start with bushes or cordons of Leveller are not likely to be disappointed with the results.

Gooseberry Leveller was raised by Mr. J. Greenhalgh of Ashton-under-Lyne, and introduced to cultivation so far back as 1851.

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Treatment of Golf Greens.—As we took a prominent part in teaching the greenkeepers in the United States how to grow fine turf—in fact, the first really good putting greens in the United States were produced from our seeds under our direct supervision at The County Club, Brookline, Mass., nearly twenty years ago—perhaps we may be allowed to refer to the article on Golf Greens in your issue of July 23. The Americans do keep their putting greens in good condition, but rather than state that their excellence is based on what you claim to be a discovery—that fine grasses thrive best in an acid soil—we would rather suggest that it is based on the fact that they are cultivated to a very high standard, and probably the average American club spends more in a year on the cultivation of one green than the average British club spends on the whole eighteen. There is nothing very new about the use of sulphate of ammonia. It is a highly nitrogenous fertiliser, and we are rather of the opinion that the effect it has on turf is in spite of the acid effect it has on the soil, rather than because of it. If it is the acid effect it has on the soil which gives such wonderful results, rather than its nitrogenous contents—by which it is valued—would it not be possible to obtain the same results by other and cheaper means. Does the experiment at Stoke Poges prove anything other than fertiliser is good for grass? One plot was well fed with sulphate of ammonia at the rate of five pounds to 1,000 sq. ft., or roughly two cwts. to the acre, at fortnightly intervals, another was dressed with sand, and a third with nothing at all. Is it surprising that the well-fed patch throve and the starved plots stood still? As a matter of fact we have advocated the system of fertilising grass on the principle of "a little and often" for years. The same results could be obtained by using any nitrogenous fertiliser, acid or neutral, and we suggest that it is not fair to stress the presence or absence of acid—the very finest grasses will thrive on acid and neutral soils—and ignore the nitrogen which is really doing the work. The crux of the whole experiment is carried in the passage which reads:—"This interim report of the results at Stoke Poges would appear to show that *where water is available* our greens and lawns may be improved rapidly by *successive dressings* of sulphate of ammonia or other "acid" manure. (The italics are ours.) Exactly; when turf is watered and fed it is obvious that it will thrive, whereas if it is not watered and fed it may not. In the United States all putting greens are watered and fed regularly, but in this country very few get either one or the other. If the British greenkeeper, gardener and farmer would fertilise and cultivate their crops properly we would hear less about bad crops and hard times. *James Carter and Co., Raynes Park.*

Apples as Roadside Trees.—I should like to suggest the planting of Cider Apples as roadside trees in suitable districts. Nothing could well be more ornamental when in flower or fruit, and the return—at the present price of Cider Apples—should be quite substantial. Pilfering would be slight if small, unpalatable varieties were used and these are commonly the best for Cider. *H. A. Smith Spark, Burnham-on-Sea, Somerset.*

SOCIETIES.

HANLEY FLORAL FETE.

Notwithstanding the unfortunate weather on the opening day, the twenty-ninth annual floral fête held at Hanley Park was a great success. The exhibition was opened by the Duchess of Sutherland, who made a special journey from London to attend the function, over which the Mayor of Hanley, Alderman W. Walker, presided. One of the most interesting features of the show was the children's section, which included no fewer than 1,800 entries of wild flowers, grasses, drawings and paintings.

Messrs. James Cypher and Son secured the first prize for a group of flowering and foliage plants arranged on a space of 300 square feet. They were equally successful for a group of non-flowering plants and for twelve table plants. In these three classes Mr. W. A. Holmes gained the second prizes, but was awarded chief honours in the class for six plants in bloom and six foliage plants. The special award and first prize for a group of aquatic plants and flowers arranged in a pool, were won by Messrs. Caldwell and Sons of Knutsford; Messrs. L. Pointon and Son, Biddulph, coming second, and Mr. F. Drew, Walsall, third.

Messrs. W. Lowe and Son, Chesterfield, secured the Silver Cup and first prize for a collection of cut Roses arranged on a space sixteen feet by four feet, and contributed a very fine display of clean, fresh flowers; Mr. G. W. Burch, second. Messrs. Jarman and Co. were particularly successful in the Rose classes, securing first prizes for thirty-six Roses, twenty-four Roses, nine distinct perpetual-flowering Roses, and twenty-four Hybrid Tea varieties. Mr. G. W. Burch was second in the two first classes, and gained first prizes for five baskets of cut Roses, for twelve white Roses, for twelve pink Roses and for twelve red or crimson Roses.

Messrs. W. Lowe and Son excelled for hardy perennials, and Messrs. C. Engelmann, Ltd., for a display of cut Carnations, while Mr. G. Astbury, Crewe, was the most successful exhibitor of Sweet Peas, with Mr. A. J. Blair, Congleton, a good second.

Floral decorations are invariably an attractive feature at Hanley, and on this occasion the best dinner table decoration, restricted to Roses, was the one contributed by Mr. A. J. Blair, the second and third prizes falling to Sir George Kenrick (gr. Mr. J. Macdonald), Edgbaston, and Miss Halliday, Congleton, respectively. In the class for a table decoration where any kinds of flowers could be used, Sir George Kenrick carried off the premier honours with a delightful arrangement of Orchids, Gloriosa superba and Gesneras. Miss Halliday was awarded second prize for an arrangement of pink Carnations, and Mr, E. White, Newcastle, was placed third for a table of Sweet Peas.

Non-competitive exhibits were numerous and of high quality. The Shirley Cup offered for the best exhibit in the show, was won by Messrs. James Carter and Co. with a very fine exhibit of vegetables of excellent quality and great variety. Messrs. E. Webb and Sons were awarded a Large Gold Medal for their exhibit of Sweet Peas, annual Chrysanthemums, Sweet Williams, Irises and other flowers. Messrs. A. G. Leighton, Ltd., received a Small Gold Medal for a fine display of Sweet Peas, Poppies, Delphiniums and other border flowers. Silver Medals were awarded to Messrs. Bakers, Mr. A. Gresham Copeland, Tittensor Chase, and to the Mountford Gardeners' Association, Penkhull

KING'S WALDEN HORTICULTURAL.

This twenty-seventh annual show, favoured with one of the few sunny days of the year, was held on Wednesday, August 3, in two spacious marquees. The pleasure grounds of King's Walden Bury were open to visitors and this, no doubt, helped to increase the number of visitors, which reached 3,500.

In the open class for Sweet Peas, Mrs. H.

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* *A Bird Book for the Pocket.* By Edmund Sandars. Published by the Oxford University Press, London. Price 7/6 net.

Dunhill (gr. Mr. Howard), Harpenden, was placed first; A. O. Fane, Esq. (gr. Mr. A. Gillings), Kimpton, Hoo, second, and Mr. E. Sutton, Brenchwood Green, third. A. O. Fane, Esq., secured first prize for a meritorious collection of vegetables, while Mrs. Creasy, Hitchin, led for a display of hardy perennials. R. D. Oldham, Esq. (gr. Mr. K. Kellaway), secured the premier award for a similar exhibit in Division B. Mrs. Creasy led for a table decoration; Miss Ingram, Kings Walden, second; and Mrs. Goldie, London, third.

The amateurs' and other classes were all well filled.

Trade exhibits were very effective. The Kirkwick Nurseries Co. arranged a rock garden which attracted a good deal of attention; Messrs. Wm. Cutbush and Sons displayed a large group of herbaceous plants; Mr. R. Cannon, Hitchin, had a miscellaneous group that included fine Gladioli; Messrs. R. Harkness and Co., Hitchin, displayed fine Roses, and Messrs. Wheeler and Son also had an attractive display.

The Herts County Council (Oaklands Institute) filled one end of a tent with examples and drawings of plant diseases.

Mr. W. G. P. Clark (who acts in a similar capacity for the Hitchin Chrysanthemum Society) and Mr. A. J. Hartless again acted as Secretaries.

ROYAL LANCASHIRE AGRICULTURAL.

On the occasion of the exhibition of the Royal Lancashire Agricultural Society, held at Bolton on July 28, 29 and 30, the horticultural section was an interesting feature, and the numerous excellent exhibits were arranged in one large marquee. A dozen classes were provided, and in the principal one for a group of miscellaneous plants arranged for effect on a space not exceeding 300 square feet, the premier award was won by Messrs. J. Cypher and Sons with one of their characteristic displays of flowering and foliage plants; second, Mr. W. Holmes; third, Mr. T. Petch. Messrs. Herd Bros. secured the first prize for a display of Sweet Peas arranged on a space 20 feet by 5 feet, and they put up an excellent exhibit; second, Mr. W. Scott-Stydel; third, Mr. R. Challinor, Crewe.

Messrs. R. Bolton and Sons' prizes for twelve bunches of Sweet Peas, distinct, were won in the order placed, by Mr. H. Brookshaw, Crewe; Mr. W. A. Weston, Keighley; and Mr. Norman Bell, Carnforth, while in the class for six bunches of Sweet Peas, Mr. F. O. Hayward, Darwen, was placed first, followed by Mr. W. A. Weston and Mr. Norman Bell. The best bowl of Sweet Peas was contributed by Dr. J. Roy (gr. Mr. Falconer), Cheadle Mental Hospital; second, Mr. W. Robinson, Garstang; third, Mr. F. Emmott, Lancaster.

Mr. T. Robinson, Nottingham, put up a very fine display of cut Roses on a space twenty feet by five feet, and not only showed good Roses, but arranged them in a very pleasing manner. He was awarded the first prize and Messrs. Bees, Ltd., the second. The last-named firm excelled in the class for a collection of hardy perennials with a group of very fine flowers arranged on a ground space 30 feet by 10 feet. The other prize winners in this class were Messrs. W. Artindale and Son and Messrs. Gibson and Co.

In the vegetable classes the produce was particularly good, and the principal prize winners were Mr. W. Robinson and Mr. Falconer.

The most meritorious non-competitive exhibit was the handsome group of magnificently-grown Begonias staged by Messrs. Blackmore and Langdon, to which the Royal Lancashire Society's Gold Medal and also the Gold Medal of the Royal Botanical and Horticultural Society of Manchester were awarded.

Other Gold Medallists were Messrs. Sutton and Sons, for Sweet Peas and other annuals; Messrs. Allwood Bros., for Carnations and Pinks; Messrs. Hewitt, Ltd., for Delphiniums; Messrs. Toogood and Sons, for Gladoli and border flowers; Messrs. Little and Ballantyne, for topiary work and Conifers; while Silver Medals were awarded to Messrs. Bakers, for hardy flowers; Messrs. Isaac House and Son, for Scabious and Messrs. Maxwell and Beale, for alpines.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Wednesday, July 20, 1927, at the Blackpool Flower Show, the members of Committee present were: Mr. J. B. Adamson (in the chair), Mr. A. Burns, Mr. D. A. Cowan, Mr. B. Collins, Mr. A. Keeling, Mr. J. Lupton, Mr. G. V. Llewelyn, Mr. J. McCartney, Mr. D. McLeod, Mr. W. J. Morgan, and Mr. H. Arthur (Secretary).

First Class Certificates.

Laelio-Cattleya Profusion var. The Queen; L.-C. Hassallii alba var. Leviathan; Brasso-Cattleya Muriel var. Adamsonae; Cattleya Harold alba var. Noel; and Odontioda Queen Mary var. Oriflamme. From Mr. J. B. Adamson.

Laelio-Cattleya Tom G. Lamb (C. Empress Frederick × *L.-C. Baden-Powell).*—From Messrs. Mansell and Hatcher.

L.-C. Jacquinette var. plumosa.—From Messrs. Stuart Low and Co.

Awards of Merit.

Cattleya Alaric (Rubens × *Dowiana); C. Falcon, Towneley Grove var.; Laelio-Cattleya Profusion var. Royal Monarch; Odontoglossum Craethus var. Purple Emperor; O. Lilian var. Perfection; O. Matador var. Sultan;* and *Odontioda Redstart var. nigrescens.*—All from Mr. J. B. Adamson.

Odontoglossum King Fuad and *Laelio-Cattleya compacta.*—From Messrs. A. J. Keeling and Sons.

Odontoglossum Prapus var. Gosie and *O. Nola var. Suttoniae.*—From Messrs. Sutton Bros.

Miltonia vexillaria var. Hy. Astley Bell.—From Ald. H. Astley Bell.

Odontioda Iris var. purpurea.—From Messrs. Mansell and Hatcher, Ltd.

Sophro-Laelio-Cattleya Niobe.—From Messrs. Stuart Low and Co.

Cultural Certificates.

To Mr. J. Howes, for Cattleya Harold alba var. Noel, Odontioda Queen Mary var. Oriflamme, and Odontoglossum eximium var. Beauté Celeste; to Mr. J. Bracken, for Vanda coerulea; to Mr. J. Lupton for Odontoglossum amabile var. Fairlight; to Mr. W. Byron, for Miltonia vexillaria var. Hy. Astley Bell; and to Messrs. Mansell and Hatcher, Ltd., for Odontioda Iris var. purpurea.

Groups.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded. Oncidiums and Cattleya hybrids formed a special feature, the whole producing a very effective display. Messrs. A. J. Keeling and Sons, Bradford, were also awarded a Gold Medal for a group of Odontoglossums, Cattleyas and several plants of botanical interest; Messrs. Mansell and Hatcher, Ltd., staged a very fine and varied exhibit to which a Gold Medal was awarded.

Col. Sir J. Rutherford, Bart., Blackburn (gr. Mr. J. Lupton), exhibited a group to which a Large Silver-Gilt Medal was awarded; this contained Odontiodas in variety, with hybrid Cattleyas. J. McCartney, Esq., Bolton (gr. Mr. C. F. Potts), was also awarded a Large Silver-Gilt Medal for an effective group; and Messrs. Sutton Bros. had a group for which a Silver-Gilt Medal was awarded.

Ald. Hy. Astley Bell, Garstang (gr. Mr. H. Byron) was awarded a Silver Medal for a small group composed of Miltonias of the vexillaria section and nice plants of Cypripedium Maudiae; Messrs. Stuart Low and Co., Enfield, contributed a mixed group for which a Silver Medal was also awarded.

The next meeting will be held at Southport on Wednesday, August 24, 1927, and it is hoped that members will do all they can to support this effort, and excel, if possible, the fine display at Southport last year, as it is the desire of the Southport Show Committee to make the Orchid section a special feature.

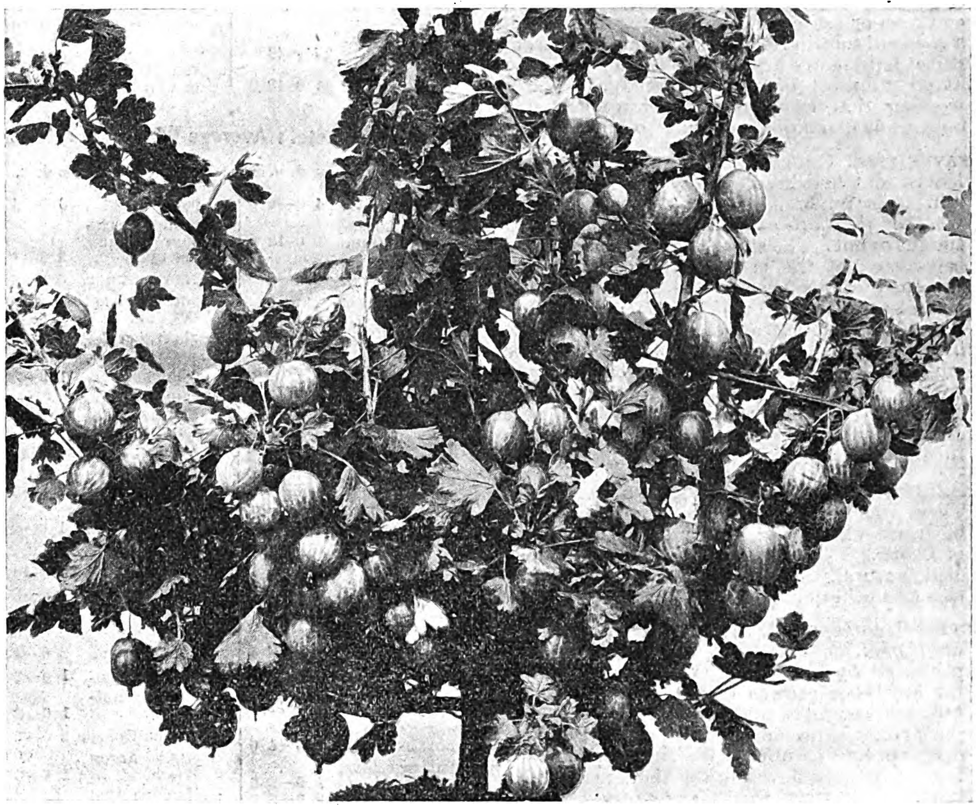

FIG. 58.—GOOSEBERRY LEVELLER.
(see p. 138).

ANSWERS TO CORRESPONDENTS.

Fungous Growth on Tennis Lawn.—*H. B. C.* The information concerning what you term an unpleasant fungous growth is not very full. About the only clues you give as to the nature of the organism is that it is dark, transparent green, slippery when trodden upon, very bad after much rain, especially in places where the grass has been worn bare. If this organism lies like a film on the soil, it is almost certain to be a species of Vaucheria, or Oscillatoria. The transparent green and all the other characters apply to the Vaucherias, which are very common in water, on damp earth and on wet ashes. All these organisms are Algae with chlorophyll or leaf-green in them. There are toadstools of various colours, but we presume you would have named them such. As the Vaucherias lie on the surface, it would require less expenditure to kill them, than in the case of toadstools that grow up out of the soil. They could be killed by dusting them with lawn sand, sulphate of ammonia, nitrate of soda, common or table salt, or watering them with a rose-red solution of permanganate of potash. Select a perfectly dry day for the operation to avoid dilution of either remedy. In dry weather the organism will dry up and disappear, as it requires moisture to grow.

Leaves from Greengage Tree.—*A. S.* The leaves sent had become very dry in the post, and it is impossible to say with certainty whether they are attacked by the Silver-leaf fungus or not. The silver colouration is due to separation of the cells of the leaf and the presence of air spaces, the fungus causing the disease being found in the wood, often well below the position of the silvered foliage. The three leaves sent do not appear to be silvered, but we would advise you to apply to the Advisory Mycologist of your district, at Long Ashton Research Station, near Bristol, who might be able to inspect the tree in question.

Jasminium officinale Failing.—*Anxious.* There was nothing present on your specimen of Jasminum officinale to indicate the cause of death. It would appear that the branch died naturally, as sometimes happens with this and other climbers.

Lupins Diseased.—*W. H. W.* The swellings on the stems and roots are galls probably produced by bacteria. They would account for any poor growth of the affected plants, but we cannot explain why the blue and pink varieties are not affected, while the white ones appear to suffer. We suggest that you try an entirely new site for the Lupins next year.

Melon Leaves Flagging.—*H. T.* The condition of your Melon leaves leads us to suggest that the real trouble in regard to your plants will be found in the roots, and, before we can give a definite opinion, it would be necessary for you to send us some roots for examination.

Names of Plants.—*R. S.* 1, Rhododendron Wilsonii; 2, Olearia stellulata; 3, Spiraea bullata; 4, Viola tricolor; 5, Lithospermum graminifolium; 6, Veronica cupressoides.

Strawberries and Violas Diseased. — *A. M. S.* The Strawberries appear to be suffering from leaf-spot disease as well as from the deterioration which is affecting Strawberries in many places. Your best plan would be to burn the plants and start on a new site with a clean, healthy stock. The Violas are suffering from Viola rust which may be kept in check in its earliest stages by spraying with potassium sulphide, but when plants are so seriously affected as yours, they should be dug up and burnt, and plants should not be propagated from them.

Communications Received.—G. H. S.—B. W.—J. S.—R. E. A.—H. A. D.—R. E.—B. L.—C. A. —R. G.—B. M.—H. E.—M. E. E.—K. W. G.—G. P.—C. F. R.—E. O. B.—L. M.—A. B.—A. B.—A. G. F.—P. W.—R. H. S.—E. B.—E. E. T.—R. W.-R.—J. R. B.—H. F. T.

MARKETS.

COVENT GARDEN, Tuesday, August 9th, 1927.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz.	10 0	12 0
—elegans	10 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	42 0
Asparagus plumosus	12 0	18 0
—Sprengeri	12 0	18 0
Aspidistra, green	36 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus	12 0	15 0
Cacti, per tray —12's, 15's	5 0	7 0
Crotons, doz.	30 0	45 0
Cyrtomiums	10 0	25 0
Fuchsias, 48's, per doz.	15 0	18 0
Heliotropes, 48's, per doz.	15 0	18 0
Hydrangeas, pink, per doz.	24 0	48 0
—blue, 48's, per doz.	24 0	48 0
Marguerites, 48's, per doz.	12 0	15 0
Nephrolepis in variety	12 0	18 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	18 0
Pelargoniums,		
—Zonal, 48's, per doz.	9 0	10 0
—Ivy-leaf, 48's, per doz.	10 0	15 0
Pteris, in variety	10 0	15 0
—large, 60's	5 0	6 0
—small	4 0	5 0
—72's, per tray of 15's	2 6	3 0
Rhodanthe, white and pink, 48's, per doz.	9 0	10 0
Roses, Polyantha, 48's, per doz.	15 0	18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Achillea, per doz. bun	4 0	6 0
Adiantum decorum, doz. bun.	9 0	12 0
—cuneatum, per doz. bun.	6 0	8 0
Alstroemeria per doz. bun.	9 0	12 0
Asparagus plumosus, per bun., long trails, 6's	2 0	2 6
med. sprays	1 6	2 6
short „	0 9	1 3
—Sprengeri, bun. long sprays	2 0	2 6
med. „	1 0	1 6
short „	0 6	1 9
Asters, white, per doz. bun.	5 0	8 0
—coloured, per doz. bun.	4 0	8 0
Carnations, per doz. blooms	1 3	3 0
Chrysanthemum Sanctity, per doz. blooms	3 0	4 0
—Mrs. J. Pearson, per doz. bun.	6 0	10 0
Coreopsis, per doz. bun.	1 0	1 6
Cornflower, blue, per doz. bun.	1 6	2 6
—pink, doz. bun.	2 0	2 6
Croton leaves, per doz.	1 9	2 6
Daisies, white, large, doz. bun.	2 6	3 6
Delphinium, blue, per doz. bun.	6 0	9 0
Fern, French, per doz. bun.	10 0	12 0
Forget-me-not, per doz. bun.	8 0	9 0
Gaillardia, per doz. bun.	2 0	2 6
Gladiolus, giant varieties, per doz. spikes—		
—pink shades	1 6	2 6
—scarlet	2 6	3 6
—white	3 0	4 0
Gypsophila elegans per doz. bun.	6 0	8 0
—paniculata	6 0	9 0
—paniculata, double, per doz. bun.	15 0	18 0
Heather, white, per doz. bun.	9 0	15 0
Lapagerias, per doz. blooms	2 6	3 6
Larkspur, various, per. bun.	3 0	4 0
Lilium speciosum album, per bun.	3 6	4 0
—short, per doz.	3 6	4 0
—rubrum, long, per bun.	4 6	5 0
—short, per doz.	2 6	3 0
—longiflorum, long, per doz.	1 9	2 3
—short, doz. blooms	1 6	2 0
Lily-of-the-Valley, per doz. bun.	24 0	30 0
Marigolds, per doz. bun.	2 0	3 0
Myrtle, green, per doz. bun.	1 6	2 0
Orchids, per doz.		
—Cattleyas	36 0	48 0
—Cypripediums	6 0	8 0
Roses, per doz. blooms—		
—Columbia	3 0	4 0
—Richmond	1 6	2 6
—Madame Butterfly	1 6	2 6
—Golden Ophelia	2 0	3 0
—Mrs. Aaron Ward	1 6	2 6
—Madame Abel Chatenay	1 6	2 0
—Hoosier Beauty	2 6	4 0
—Liberty	1 6	2 0
—Molly Sharman Crawford	1 6	2 6
—Premier	—	3 0
Smilax, per doz. trails	4 0	6 0
Statice sinuata, mauve, per doz. bun.	6 0	10 0
—latifolia, per doz. bun.	12 0	15 0
Scabiosa caucasica, per doz. bun.	3 0	4 0
Stephanotis, per 72 pips	2 6	3 0
Stock, per doz. bun.—		
—double white	5 0	9 0
— — mauve	6 0	9 0
— — pink	6 0	9 0
Sweet Peas, in variety	4 0	9 0
Sweet Sultans, white, per doz. bun.	4 0	5 0
—mauve, per doz.	4 0	5 0

Remarks.—Business is sluggish in the cut flower department, and as flowers of many kinds are abundant, prices are low. Roses, Carnations, and Gladioli are arriving in excess of ordinary requirements, consequently the street traders buy up large quantities at the close of the market, and were it not for their assistance, many flowers would be consigned to the dust carts.

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples, English—		
—Beauty of Bath	4 0	9 0
—Gladstone, ½-sieve	3 0	5 0
—Grenadier, per bushel	3 0	10 0
Apples, New Zealand—		
—Sturmer Pippin	20 0	25 0
—Early Victoria, per bushel	3 0	7 0
—Other Cooking Apples, per bushel	2 6	7 0
—Portugal, per case	8 0	10 0
Bananas	13 0	22 0
Black Currants—		
—English, chips, per lb.	0 6	0 9
Cherries, English—		
—August Hearts,	8 0	10 0
per 12 lb.	10 0	12 0
Currants, Red, 3 lb. chip	1 6	2 0
Figs, per doz.	4 0	12 0
Gooseberries—		
—Leveller, per lb.	0 4	1 3
Grape Fruit—per case	35 0	42 6
Grapes, English		
—Colmar	2 0	3 0
—Black Hamburgh, per lb.	1 6	3 0
—Alicante	1 6	2 6
—Gros Maroc	1 6	3 0
—Muscat	2 6	6 0
—Canon Hall	2 6	8 0
Lemons, Messina Boxes	7 0	25 0
—Naples, per case	20 0	26 0
Melons, each—		
—English and Guernsey	2 0	10 0
Canteloup, each	2 0	10 0
Oranges, per case—		
—Cape Navel	20 0	21 0
Nectarines, doz.	4 0	12 0
Peaches, per doz.	6 0	18 0
Pears, French—Williams's Bon Chretien	4 0	8 0
Pines, case	21 0	40 0
Plums—		
—English, Early Rivers, ½-sieve	4 0	6 0
—Czardas	4 0	7 6
—Spanish Gages, ½-sieve	8 0	14 0
—Portuguese	4 0	5 0
—French	4 0	6 0

Remarks.—The glut of fruit, mainly Plums and Gages, from the continent, last week brought about rather erratic conditions in certain sections. At the week-end, home-grown Plums fell sharply in value, but at the time of writing the position shows much improvement. Choice fruits, such as Grapes, Peaches, Nectarines, Figs and Melons, are quoted rather easier. Dessert Apples, however, are a firm trade, as also are large cookers, but small and medium fruit is selling badly. A few late Cherries are selling remarkably well, as usual, and will continue to meet a good demand while they arrive in a satisfactory condition. Mushrooms sell fairly well, but the quantity available is not large. Good Peas are wanted, but French Beans sell slowly at low prices. The Tomato trade is very good just now and prices have improved. Cucumbers are selling only moderately well. The vegetable section is not particularly busy, and trade is only fair. The Potato business is also on the quiet side and quotations are moderate.

GLASGOW.

Little change has to be reported in the conditions under which business was conducted in the cut flower market during the past week. For the most part prices were steady and any changes that took place were in a downward direction. Carnations continued plentiful and cheap, being worth from 1/- to 1/6 per dozen; Roses ranged from 9d. to 2/-; Gladioli, 9d. to 1/3 (6's); Sweet Peas, 1d. to 4d. per bunch; Chrysanthemums, 4d. to 8d; Stocks, 4d. to 6d.; Asters, 2d. to 6d.; Marguerites, 1d. to 3d.; Morning Star, 1d. to 2d.; Gypsophila, 2d. to 3d; Lilium longiflorum, 2/3 to 2/6; and Asparagus, 9d. to 1/3.

Soft fruits dominate the fruit market. Special table Strawberries realised 1/6 per lb.; ordinary qualities, 8d. to 1/-, and jam berries, 6d. to 7d.; Black Currants, 10d. to 1/2; Red, 4½d. to 6d.; White, 3½d. to 4d.; Raspberries, 8d. to 10d.; green Gooseberries, 2d. to 2½d.; yellow, 5d. to 6d.; Czar Plums, 10/- to 12/- per sieve; French Plums, 7/-; Cherry Plums, 8/- to 9/-; Grapes, 1/9 to 2/- per lb.; Muscats, 3/- to 4/-; Peaches, 6/- to 8/- per dozen; imported, 5/- box; Williams's Pears (64's), 14/-; (72's), 12/-; Canteloupe Melons, 7/6 to 8/- per case of 8; English Apples, 4½d. per lb.; Grape Fruit, 22/- to 27/- per case; South African Oranges, 25/- to 28/-; Californian, 30/- to 34/-.

In the vegetable section, Tomatos ranged from 6d. to 8d. per lb.; Marrows, 4/- to 6/- per pot; French Beans, 4d. to 5d. per lb.; Lettuce, 1/- per dozen; Cauliflowers, 5/- to 7/-; Cucumbers, 5/- to 8/-; and Peas, 5/- per sieve.

GARDENING APPOINTMENT.

Mr. W. H. Wain, previously gardener for nine years to the late E. J. Woolley, Esq., West Thorpe, Bowdon, Cheshire, as gardener to F. G. Maguire, Esq., Glenbank, Bangor, Co. Down, N. Ireland. (Thanks for 2/- for R.G.O.F. Box.—Eds).

CATALOGUES RECEIVED.

Little and Ballantyne, Carlisle.—Bulbs, Roses, fruit trees, etc.

Clibrans, Ltd., Altrincham.—Hydrangeas; bulbs, flowering shrubs, etc.

Foreign.

John B. Vanderschoot, Ltd., Hillegom, Holland.—Bulbs.

V. Lemoine and Son, 136-142, rue du Montet, Nancy, France.—Delphiniums, Paeonies, etc.

S. Starke and Co., Ltd., Mowbray, Cape Town.—Seeds.

Ant. Roozen and Son, Overveen, nr, Haarlem, Holland.—Bulbs.

THE
Gardeners' Chronicle
No. 2121.—*SATURDAY, AUGUST* 20, 1927.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 60.7°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 17, 10 a.m. Bar. 30.0. Temp. 60°. Weather, Sunny.

Oil Sprays for Spring and Summer Use.

The number of spray-materials multiplies almost as fast as the pests which they are destined to control, but there is always room for more, provided that they are cheaper and more efficient than those which they are destined to replace. Oil sprays, though as yet not much used in this country, have been employed widely in Canada and in the United States, and hence it was well worth while that they should be tried here, and particularly that they should be tried as substitutes for nicotine. The report* now issued by the Agricultural and Horticultural Research Station of Long Ashton indicates that of the oil sprays tested, Rape oil is both cheap and effective. It is readily emulsified by several mixings with liquid soap, that is, soft soap consisting of one part soap and two of water. An eight per cent. soap solution made by diluting liquid soap until one-twelfth of it is soap is used for emulsification. The soap and oil in equal quantities are poured one into the other several times till complete emulsification is effected. To the water in the spraying tank enough soap is added to give it a lather, and then enough of the emulsion prepared as indicated above is poured into the tank to give the strength required. Rape oil emulsion may be used up to a strength of two per cent. Used as a spray for Roses half per cent. is strong enough and is found not to scorch the petals. The uses of Rape oil emulsion as a spray would appear to be numerous. The emulsion may replace tar-distillate washes when, owing to the presence of under crops and because of weather conditions or labour shortage, the latter excellent insecticide cannot be used. It may serve as a cheap aphis wash for spring and summer use, and it may also be used as a cheap content wash to control Apple capsid bug, woolly aphis and similar pests, in which cases it should be employed at a strength of from one to two per cent. The investigations which are being conducted by Mr. L. N. Staniland are being continued and the results should prove of interest and value. In the meantime those who would like to experiment with Rape oil emulsion may apparently do so with confidence that they will be employing an insecticide which can do little if any harm to foliage, and quite considerable execution on the pests which attack top and bush fruits as well as Roses and other garden plants. Whether with fuller experience this new type of spray will be found to be more effective than the excellent materials already available, time and experience alone can tell.

Colonial Appointments from Kew.—At the present time, when so many careers appear overcrowded, it is interesting to emphasise the remarkably good opportunities which await the young student of horticulture who is keen to see something of the world and does not mind living a life, not unconnected with real adventure, in the tropical colonies of the Empire. These opportunities, of course, are not unlimited, but many of the student gardeners at the Royal Botanic Gardens, Kew, who desire a life overseas and who are physically fitted for it may secure appointments in the service of a Colonial Government. These posts are generally in the horticultural section of a Colonial Agricultural Department, though often appointments are made to the general executive side of the department. The initial salaries vary from £300 to £480 per annum, and the prospects, which entirely depend on the individual, are exceptionally good. During the past year or two student gardeners have been appointed to posts in the West Indies, Gambia, Sierra Leone, Gold Coast, Sudan, Zanzibar and Straits Settlements, whilst quite recently others have gone to the Federated Malay States and the Cameroons. One was selected last year for a two-year scholarship at the South-Eastern Agricultural College, Wye, and the Imperial College of Tropical Agriculture, Trinidad, under the Milner Scheme of training candidates for the Colonial Services. That these men make good can be seen from the appearance in the recent Birthday and New Year's Honours Lists of the names of several old Kew men in Colonial Services, whilst more than one Colonial Agricultural or Horticultural Department has a Kew man at its head. It would require a long article to enumerate the many public and private appointments held by Kew-trained men in this country, in the Empire, overseas and in foreign countries the world over, but it is not often realised what excellent opportunities occur in the tropical Colonies. It may be mentioned that candidates are required to have four years' good practical training in horticulture before entering Kew, and that during the two years they remain at Kew they undergo an extensive course of lectures and training in sciences pertaining to horticulture, in addition to their practical training.

The Cider Apple Crop.—According to the *Agricultural Market Report* issued by the Ministry of Agriculture, the prospects of the cider Apple crop in this country are variable. The best reports come from Somerset, where the crop is expected to be heavy in one or two districts and well up to the average generally. A fair amount of dropping is reported from Devon, and the crop promises to be slightly below the average. In Gloucester, Dorset and Hereford the crop is likely to be moderate only, and in Worcester light to moderate. The cider Apple crop in France is likely to be good.

Garden Competition in Hamburg.—The Corporation of Hamburg (with Altona and Wandsbek) is arranging again this year, as last, a competition for the best front garden, balcony, etc., with a view to encouraging the inhabitants to take a pride in the horticultural decoration and development of their dwellings. The rewards to be given include diplomas, medals, Palms, and pot plants, the whole expense of which is being borne by the municipality.

Origin of Some Fruit and Vegetable Names.—*The Fruit, Flower and Vegetable Trades' Journal* for August 13 gives the origin of the names of some of our common fruits and vegetables. The Gooseberry is said to have no connection with Geese, but derives its name from the old High German word, *Krus*, meaning crisp. Shaddocks are named after a seventeenth century seaman, a Captain Shaddock, while Gages recall the memory of Sir W. Gage, of Hensham Hall, who introduced the fruit from Chartreuse, France. The Filbert takes its name from St. Philibert, whose day falls at the beginning of the nutting season. Marmalade comes from a Portuguese word, marmalado, the golden, Pear-shaped Quince from which the preserve was originally made. Cole, the original name of the Cabbage, gives us Cauliflower and Kale. Many vegetables are named after places, such as the Savoy, Brussels Sprouts and Rhubarb, which is found on the banks of the Rha, the Russian name for the Volga. Parsnip is from the Italian *pastinum*, a pointed instrument used for making holes in the ground. With regard to the origin of the Loganberry, it is news to learn that it is named after the Canadian mountain where it was first cultivated. We always understood this fruit was named after Judge J. H. Logan, of Santa Cruz, California, as stated in Bailey's *Standard Cyclopedia of Horticulture*.

A New Hudson Memorial.—Adjoining the Brent Valley Golf Links, in the Borough of Ealing, is an estate of seven acres, and the greater part of the grounds having been left almost entirely untouched for fifteen years or more, it has become a recognised haunt of birds, many species being known to have nested there. These include the Blackcap, the Garden and Willow Warblers, the Whitethroat and the Moorhen. Wildfowl come to the lake which is formed by the perennial spring, and the Goldfinch and Green Woodpecker are often to be seen. The Selborne Society has long wished to protect the ground in question, and at last there is an opportunity of acquiring it. It has been suggested that it would make a fitting memorial to the late W. H. Hudson, who helped the Selborne Society to establish the Brent Bird Sanctuary at Perivale, higher up the river, which twenty-five years ago set an example that has been widely followed, of preserving for urban districts the interesting birds of the countryside. It will not be necessary for the Selborne Society to take over the mansion, as this has been fitted up as a hospital by the Government, but if funds allow, two good things might be done at once, for it could most appropriately be placed at the disposal of some charitable organisation, or it could be used as the beginning of a Folk Museum, which ought to be inaugurated in this country before it is too late. The property was advertised for sale by auction in building plots, but some members of the Selborne Society have, for the moment, saved it from this fate, and Lord Montagu of Beaulieu, Lord Avery and Sir John Otter are making an appeal for donations towards its purchase and maintenance. Donations should be sent to the Treasurer, Sir John Otter, at The Hermitage, Hanwell, W. 7.

A Dutch Horticultural Jubilee.—The beautiful and ancient town of Leiden, in Holland, is busy with preparations for the festivities planned for September 13 and the five following days, to mark the fiftieth anniversary of the formation of the local branch of the Dutch Royal Horticultural Society. In a country like Holland, where commercial horticulture takes such an important place among industries, an event such as the one now about to be celebrated arouses much public interest. The Burgomaster is to open the initial proceedings in the historic Town Hall; on September 14 there is to be a representation of a floral play, or opera; excursions are to be arranged to Wassenaar and Noordwijk and altogether, given a reasonable amount of sunny, open weather, the festival week should be an immense success. Quite apart from its horticultural interest, Leiden has a wealth of historic associations to offer to anyone archaeologically inclined, as well as a beauty and picturesqueness which delights every artist-visitor.

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* *Annual Report*, 1926.

Fifth International Botanical Congress, Cambridge, 1930.—At the International Congress of Plant Sciences (Fourth International Botanical Congress) held at Ithaca, United States, in August, 1926, an invitation was conveyed from British botanists for the Fifth International Botanical Congress to be held in England in 1930. The invitation was accepted by the botanists assembled at Ithaca, and arrangements are now being made for the Congress to be held at Cambridge about the middle of August, 1930. An executive committee has been formed to make arrangements for the Congress, consisting of Dr. F. F. Blackman, Professor V. H. Blackman, Dr. E. J. Butler, Professor Sir John Farmer, Professor F. E. Fritsch, Professor Dame Helen Gwynne-Vaughan, Dr. A. W. Hill, Professor W. Neilson Jones, Sir David Prain, Dr. A. B. Rendle (Treasurer), Professor A. C. Seward (Chairman), Professor W. Stiles and Professor A. G. Tansley. It has been decided to organise the Congress in the following seven sections: Morphology (including Anatomy), Palaeobotany, Plant Geography and Ecology, Taxonomy and Nomenclature, Genetics and Cytology, Physiology, and Mycology and Plant Pathology. Mr. F. T. Brooks, The Botany School, University of Cambridge, and Dr. T. F. Chipp, Royal Botanic Gardens, Kew, have been appointed Honorary Secretaries of the Congress, and any communications with regard to the Congress should be addressed to one or other of the Secretaries.

Potash from the Dead Sea. The *Times* of Monday last gave interesting particulars of the chemical constituents of the Dead Sea, which is estimated to contain 2,000 million metric tons of potassium chloride; 980 million metric tons of magnesium bromide; 11,900 million metric tons of sodium chloride (common salt); 22,000 million metric tons of magnesium chloride; and 6,000 million metric tons of calcium chloride. The supply of potash is said to be practically inexhaustible, and it is this product that makes the Dead Sea valuable from a commercial point of view. The rights to exploit the vast chemical resources of this inland sea were put up to public tender by the Crown Agents for the Colonies, and although the original tenders were found unsatisfactory and rejected, negotiations with certain British principals have reached an advanced stage and apparently only questions of detail have to be settled. The *Times* gives particulars of the method by which it is proposed to extract the salts. There will be three principal stages; first, the common salt will be crystallised out, and the mother liquors drained off into carnallite crystallising tanks. Next, the carnallite will be crystallised and the mother liquor drained off and allowed to flow back into the Dead Sea, unless it is used later for the production of magnesium, calcium chloride and bromide. Fresh water will be run on to the carnallite through sluices, which will decompose and readily dissolve the fine crystalline mass of carnallite in those parts of the pan where there is motion of the fluid. In the third stage evaporation will go on with about the same rapidity as in the original brine pan until the potassium chloride is crystallised. It is estimated that for every ton of eighty per cent. potash, five tons of common salt will be produced and 40,000 tons of bromide returned to the Dead Sea. If the production of potash is successful commercially, the bromide will probably be extracted, which, at its present price, will be a lucrative business. A vast amount of pure magnesium chloride will be produced in the process, for which there will be a market and there is a fair market for calcium chloride; one of the uses to which the latter could be put would be in liquid form for preventing dust on roads during the dry season in the Near East.

The Rt. Hon. The Lord Lambourne, P.C., C.V.O., V.M.H.—We offer our heartiest congratulations and those of our readers to the veteran President of the Royal Horticultural Society on attaining his eightieth birthday, which happy event he celebrated on Wednesday last. He was present at the R.H.S. meeting on the 16th inst., as full of life and jollity as ever, receiving the heartiest congratulations of numerous horticultural friends. A letter written by Lord Lambourne to the press recently on the modes and manners of his times has caused much amusement and interest. It has been severely criticised by a prominent literary man, who had taken him too seriously. In reply to his critic Lord Lambourne said "I have been frivolous all the days of my life, and shall probably be frivolous when I am 90, 100, or 110, to all of which ages I intend to reach." An example of the delightful wit of Lord Lambourne was his statement to an interviewer—he believed with his critic that the English aristocracy was distinguished forty years ago by "a number of extremely brilliant and delightful people who lived lives of singular graciousness and great social service," remarking "Hear, hear! I must have been one of the others." The Royal Horticultural Society is indeed fortunate in having as its President a nobleman so distinguished in the social and political world, an ideal Chairman, who combines facetious remarks with a keen sense of the business importance of a chairman's duties, and a keen lover of gardening. That he may live long to continue in the office he so worthily fills is the heartiest wish of all connected with the Society and horticulture generally.

THE RT. HON. THE LORD LAMBOURNE, P.C., C.V.O., V.M.H.

Mr. Hemsley's Sidalceas.—At the Staffordshire and Midland Counties Floral Fête, held at Burton-on-Trent, on the 10th and 11th inst., Mr. H. Hemsley, Crawley, won the seventy guinea Challenge Cup offered by Messrs. Abol, Ltd., "for the most progress made in plant breeding during recent years," with his strain of Sidalceas. His exhibit filled a space forty feet by ten feet, all of Sidalceas of his own raising, including such varieties as Miss Willmott, dark crimson; Marcus Adams, carmine; Miss Walters Anson, double, rosy-pink; Hemsley's White, clear pure white; Mrs. R. Corfield, rich crimson; John Sherratt, petals overlaid with satiny pink; Mrs. L. R. Messel, flesh pink; and Mrs. J. B. Riding, double, soft pink. Other flowers entered for the competition were Scabious, shown by Messrs. I. House and Son, and Rose Princess Elizabeth, exhibited by Messrs. Wheatcroft Bros.

Legacies to Gardeners.—Mr. F. Copeman, of Shenfield, Essex, who died on May 8, leaving a fortune of £174,296, bequeathed £50 to his head gardener.—Mr. Philip L. Townsend, Lawnfield, Maidenhead, who died on March 21, leaving estate valued at £54,476, bequeathed an annuity of £10 to his late gardener, Mr. Thompson.

German Horticultural Exhibitions.—On July 16 and 17, an exhibition of cut Roses took place in the hall of the Frankfurt Palm Garden, which aroused widespread interest and attracted crowds of visitors. There were about 5,000 Roses on show, from Frankfurt and the district, all the chief growers having vied with each other in furnishing exhibits worthy of their reputation. At the close of the exhibition the Roses were sent to the hospitals, where the patients welcomed them warmly.—From July 9 to 11, a Rose show was arranged by the Hesse Confederation of the German Gardening Society, at Steinfurth, a great German Rose-growing centre. So popular was the exhibition that on the Sunday afternoon it was necessary for a time to close the doors and prevent anyone else from entering, as the fine weather brought many visitors from neighbouring towns, partly to see the show, and partly to view the fields of Roses which are a feature of the Steinfurth landscape. —At Zwenkau, from July 16 to 18, a Rose show was organised to celebrate the completion of the twenty-five years' existence of the local Gardeners' Association. The show was very interesting, and many excellent exhibits were contributed, besides a large number of florists' and horticultural sundries—perhaps a trifle too many, considering the small scale of the show. However, it was a great success, and reflected credit on its organisers.

"Botanical Magazine."—The August issue of this valuable work contains descriptions and illustrations of some very beautiful garden plants. Tab. 9,116 is a double-paged plate of Magnolia Sprengeri diva, one of the most beautiful of all the Magnolias introduced in recent years. In the accompanying description by Dr. Stapf it is described as the Chinese representative of the Himalayan M. Campbellii, which it rivals in beauty, or as a superior sister-species of the Yulan, M. denudata. It is distinguished from the latter in the number of petals, twelve, and in the shape of the leaves, which are slightly glaucous on their underside, and from the former by the shape of the leaves and their much scantier indumentum in the young state. The material from which the plate was prepared was obtained from a tree growing at Caerhays Castle, Cornwall. Cypripedium manchuricum virescens, t. 9,117, is synonymous with C. ventricosum and C. macranthon. The solitary flowers have a large, globose-obovoid lip, and this organ, together with the other parts of the flower, are whitish with a greenish suffusion. The plant has proved to be hardy in Switzerland, and it is probably hardy in this country. Anagallis collina, t. 9,118, has a habit somewhat like that of our native Pimpernel, but the flowers are brownish or terra cotta, according to the plate, although described in the text as brilliantly scarlet with a purple centre. Rhazya orientalis, t. 9,119, was illustrated in *Gard. Chron.*, July 11, 1925, page 31, Vol. LXXVIII (not LVIII, as stated in the *Bot. Mag.*). Rhododendron megeratum, t. 9,120, is a dwarf shrub with bright yellow flowers, and described by the late Sir Isaac Bayley Balfour as one of the most charming of the dwarf Rhododendrons, the specific name he gave it meaning "lovely in the highest degree." Primula effusa, t. 9,121, is a species of the malacoides type, with flowers in whorls developed on long peduncles, the individual pips being a little larger than those of P. malacoides and of a lavender-rose colour. Salix gracilistya, t. 9,122, is a distinct species with very long, slender styles, which are responsible for the specific name. The leaves are broadly lanceolate and greyish-glaucous on the undersurface. The fine, silky catkins with anthers of a brilliant orange or scarlet colour, are particularly attractive. Aster Forrestii, t. 9,123, is a dwarf species of great garden promise. The flowers are purplish-violet with a rich orange disc. The species was found by Forrest on the snow mountains north of the Doker La in 1918. Acacia marginata, t. 9,194, was found by Robert Brown so long ago as 1801, in King George's Sound, and was introduced into cultivation in 1803. It is near to A. myrtifolia. Spartina Townsendii, t. 9,125, was described in *Gard. Chron.*, Vol. XLIII, page 33. It is one of the mud-binding grasses, and found on the coasts of Essex, Hampshire and the Isle of Wight. Habranthus robustus, t. 9,126, is the Zephyranthes robusta of Baker. It is a very beautiful plant and native of the Parana and Uruguay Rivers. The species was introduced in 1827 by Mr. J. B. Mackay, a nurseryman of Clapton, from Buenos Aires. It makes a fine pot plant and is suitable for cultivating out-of-doors on a warm border near to a wall.

August Exhibition in Berlin.—The German Horticultural Society is organising an indoor flower and plant exhibition to take place from August 20 to 28, with sections for Cacti, summer-blooming flowers, Roses, perennials, Dahlias and Gladioli.

International Conference of Allotment Holders.—The first international Conference of Allotment and Gardens Federations is being held at Luxembourg on August 19 to August 22, when about twenty different nationalities will be represented. The Conference is being held under the patronage of the Grand Duchess of Luxembourg and the Government of the Grand Duchy. Delegates from the National Union of Allotment Holders of England and Wales are attending the Conference.

Golden Wedding.—Mr. and Mrs. J. May, late of Northaw House Gardens, Potters Bar, celebrated their golden wedding on August 18, at Childwick Bury Gardens, St. Albans. Mr. May was for many years at Northaw House and was formerly a very successful exhibitor of vegetables in the London district.

Whiteley's Flower Competition.—We are glad to find that the use of flowers for advertising purposes is growing steadily, if slowly. Messrs. Wm. Whiteley, Ltd., have organised an attraction in the form of a flower competition. All that is required is a bunch of flowers from competitors' own gardens, mixed or otherwise; four prizes of £5 each, and four of £2 each are offered. There will be two competitions, the first on Tuesday, August 23, and open for exhibition on Tuesday and Wednesday. Entries should be taken to the Stores if possible on Monday, August 22, although entries received by post before 9.30 a.m. on Tuesday morning will be in time to be judged. There will be two classes, *i.e.*, Class A: grown within twelve miles of Whiteley's; and Class B: grown outside this twelve mile radius. The second competition, on similar lines, will take place on Thursday, August 25, and the flowers will remain on view during Thursday and Friday, August 25 and 26.

Darmstadt Exhibition.—The Chamber of Agriculture in Hessen has in hand the arrangements for a great agricultural exhibition to take place in Darmstadt during six days in September, from the 15th to the 20th inclusive. This will include a vast Fruit, Vegetable and Flower show, to which visitors from all parts of Hessen are expected to come. The programme is framed on the best modern lines, and sorting and packing are given due prominence in the fruit classes, which are likely, in view of the extent of the local fruit-growing industry, to be the central point of interest. A large, newly-built hall is to accommodate the exhibition, which will include a section of the newest agricultural machinery and implements.

Florists' Telegraph Delivery Association.—This Association will be represented at Southport Flower Show on August 24, 25 and 26, by examples of floral art, by members who will address the public, and by literature explaining the aims and objects of the Association. A Conference will be held in Cambridge Hall, Lord Street, Southport, on Thursday, August 25, at 3 p.m.; afternoon tea will be provided for all who attend. The object of the Conference is to discuss ways and means for a collective advertising campaign; the discussion will be opened by Mr. E. Horton (Messrs. Bees, Ltd.), followed by Mr. J. Dobson, Glasgow.

Marburgh University Anniversary.—The University of Marburgh, Germany, is celebrating this year its four hundredth anniversary, and in order to take its due part in the festal arrangements, the Botanic Garden is provided with a carpet bed on which is shown the Hessen Lion rampant and the dates 1527-1927. This design, which is carried out in Begonias, Iresines, Sempervivums, and Alternantheras is exciting great interest among the Marburgh townsfolk.

Appointments for the Ensuing Week.—Wednesday, August 24: Southport Flower Show (three days); Littlehampton and District Horticultural Society's show; Helensburgh and Gareloch Flower Show; Lanark Flower Show; Dunbar Flower Show. Thursday, August 25: Dundee Horticultural Society's Show (three days); Lochgilphead Flower Show; Ayton Flower Show; Paisley Florists' Society's meeting. Friday, August 26.—Holytown Flower Show; Inverness Flower Show; Dunfermline Flower Show (two days). Saturday, August 27: Innerleithen and Traquair Flower Show; Alexandria Flower Show; Auchterarder Flower Show; Baillieston and District Flower Show; Beith Flower Show; Chirnside Flower Show; Dailly Flower Show; Selkirk Flower Show; Falkirk Flower Show.

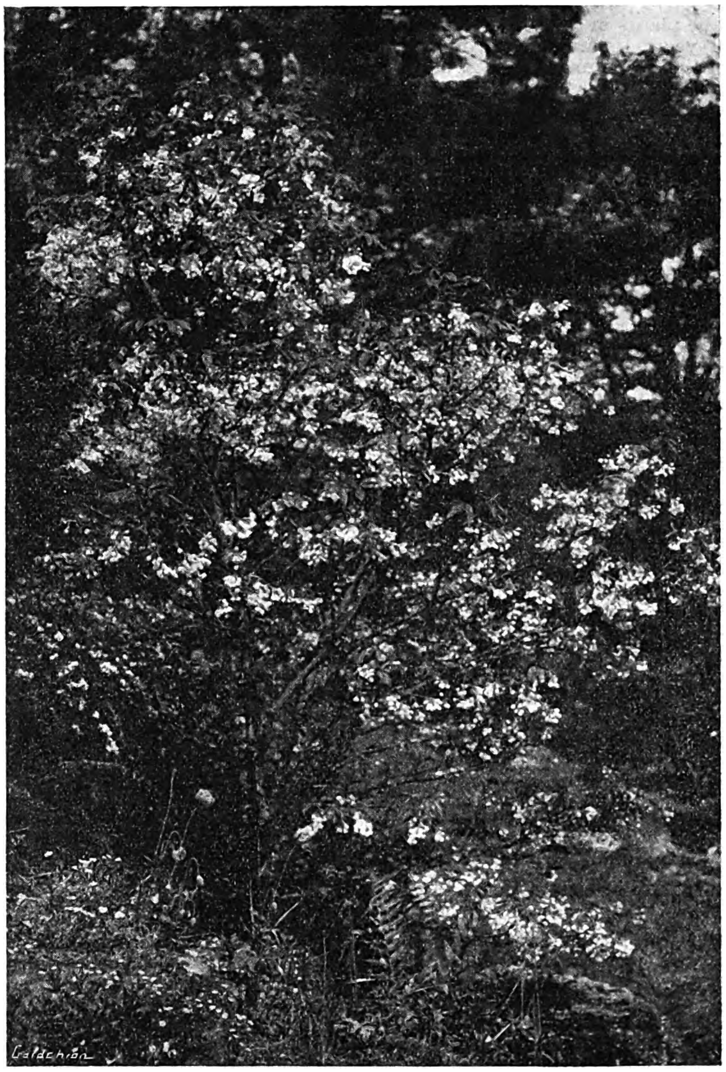

FIG. 59.—STAPHYLEA HOLOCARPA.
(see p. 148).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Beach's Queen Strawberry Plants.*—Having taken several prizes these two years with Queen's Strawberries, thousands of them weighing upwards of two ounces, many of them I exhibited last year in the Crystal Palace upwards of three ounces, and this year, at Chiswick, they gained two Knightian Medals on July 10; and also on the 14th inst. the Head Prize at the Great Show at Lewes. See also Dr. Lindley's opinion of them in *The Gardeners' Chronicle* of the 10th of July, and likewise Mr. Cuthill's account of my place in the same Journal of the 24th of July. Strong, healthy, and fine plants are now ready to be sent out at 5/- per 100, box included.—Post Office Orders on Hounslow to Mr. Thomas Beach, Market Gardener, Worton, Isleworth, near London. *Advertisement in Gard. Chron., August* 21, 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon,
Bletchley Park, Bletchley, Bucks.

Succulent-leaved Cypripediums.—The thick-leaved Cypripediums which comprise C. concolor, C. bellatulum, C. Godefroyae, C. niveum, C. leucochilum and numerous hybrids, are among the gems of an extensive genus, but they are not so easily managed as the majority of Cypripediums. Many fail to grow this section successfully or retain the plants in a healthy condition over a series of years. Many of the hybrids, of which C. Boltonii is an example, are of free and vigorous growth; therefore there is no reason why some members of these delightful plants should not be enjoyed. The plants succeed best when grown close to the roof-glass, where they are free from drip, and out of the way of the syringe, and a warm, moist atmosphere is necessary to their well-being. In their native habitat the species are found growing in abundant sunshine which their thick, leathery leaves are capable of withstanding, and they undoubtedly retain this liking for a light position under cultivation. Shading is necessary because exposure under glass to direct sunshine would burn the foliage, but at the same time the plants should not be overshaded at any time. During the growing season the plants need liberal supplies of water at the roots, but during the winter the greatest care is necessary, although even at that season they must not be allowed to become dry. Watering overhead is not to be recommended and, in most cases, is decidedly harmful. The most suitable time for repotting these Orchids is soon after they have passed out of flower, but disturbance at the roots should not take place unless the conditions of the compost and drainage demand it. The plants usually succeed best in a compost consisting of turfy loam, peat fibre and Sphagnum-moss, and they display a preference for limestone, so that if the loam obtained is from limestone, so much the better. Limestone may also be used in lieu of crocks for drainage, and crushed limestone may be mixed in the compost to keep it open in texture.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord
Wavertree, Horsley Hall, Gresford, N. Wales.

Celery.—If the weather is dry during this month, the roots of Celery should be well soaked, both with clear water, and liquid manure. Keep the foliage well dusted with old soot, or it will be attacked by Celery fly. When the early plants are sufficiently advanced, it will be necessary to commence earthing up, adding a little more soil every fortnight; before doing this, mix a little lime or soot with the soil.

Beet.—Owing to the wet weather, the early crop of Beets has grown very fast, therefore, the roots should be lifted before they become too large and coarse. Store them in the coolest place possible, in sand. The utmost care should be taken when lifting not to break or damage any of the roots, or loss of colour will result. The leaves should not be cut off with a knife, as is often done, but be twisted and wrenched off; hold about two inches of the leaf stems nearest the root firmly in one hand while with the other hand wrench off the leaves. Do not allow the roots to lie long on the ground as they quickly wither.

Thinning Crops.—Many crops sown during July are now ready for thinning, and this work should be done without delay, the crop afterwards being given a light dusting of soot and kept well hoed.

Corn Salad.—It will be wise to sow a batch of this useful salad for a late autumn supply. Sow the seeds in drills drawn one foot apart, and thin the plants to about four inches apart so soon as they are ready. If the weather is dry keep the plants well watered.

Marrows.—These are fruiting well and should not be allowed to suffer from lack of water at any time. Clean water should be alternated with liquid manure, as Marrows are gross feeders. Keep the growths well thinned and trained in position with strong pegs. Do not allow the fruits to become old and coarse. Should disease appear cut out the affected shoots at once, or it will quickly spread over the whole plant.

Shallots.—Lift these so soon as they are ripe, and lay the bulbs out thinly in a very sunny position to dry.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Calceolarias.—Prick off the seedling Calceolarias so soon as they can be handled; the compost at this early stage should consist of equal quantities of sifted loam and leaf-mould, adding plenty of silver sand to keep the compost open. Young plants that have been pricked off previously into boxes should be transferred to small pots when it is considered necessary to do so. Make the soil fairly firm with the fingers, but do not bruise the tiny plants in the process of potting. Afterwards place them in a cold frame or pit where they may enjoy plenty of light without being directly exposed to sunshine. Keep the frames closed for a short time after potting, but when it is noticed that the Calceolarias have re-established themselves, afford them plenty of ventilation. Slugs are very partial to these plants, and means should be employed to keep these pests in check.

Souvenir de la Malmaison Carnations.—Where these were propagated early by layering they will soon be ready for lifting and potting, but several days before proceeding with this operation the layers should be severed and the surroundings thoroughly watered so that they may be lifted with all the roots attached. Those that have rooted freely may be placed in forty-eight-sized pots, while those that have fewer roots may be potted into sixties. The potting compost should consist of good loam with plenty of old mortar rubble added, and it should be moderately dry to allow it to be rammed fairly firmly. Afterwards stand the plants in a cold frame which should be kept close for a few days and shaded from bright sunshine.

Pelargoniums.—Varieties of the show and regal Pelargoniums that have been stood outside should now be cut hard back and laid on their sides for a week or so to ensure a complete rest. It is always advisable to propagate a few cuttings each year to keep up a vigorous stock, and the best shoots should be selected for this purpose. These will root very quickly if stood in a cold frame and sheltered from heavy rains. The required number of old plants should be repotted into smaller receptacles so soon as they show signs of breaking into new growth. During the winter months they should be grown as cool as possible and be placed in a light position close to the roof glass and allowed plenty of fresh air.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford,
Wrotham Park, Barnet, Middlesex.

Sweet Cherries.—Most of the trees growing against west walls have borne very satisfactory crops in these gardens. The varieties which generally give the best crops are Early Rivers', a very sweet, early black sort that yields well both on west and east aspects; Waterloo, Elton Heart, Bigarreau de Schreken and Napoleon Bigarreau; the last-named has been very fine, but because there was little sunshine during the ripening period the individual fruits lacked sweetness. Where the fruits have been gathered, remove the nets and store them in a dry, airy place. All the leaders and shoots needed must be neatly secured in position, while others not required for any particular purpose should be shortened back. Afterwards wash the foliage thoroughly to dislodge any insect pests. If the soil surface has become hard and baked it should be loosened to a depth of two or three inches to allow water to pass freely down to the roots. A liberal dressing of lime, a top-dressing of good loam and lime rubble, or a mulch of manure, followed by a thorough soaking of water will, in most cases, prove very helpful to the trees.

Heavy Fruit Trees.—In many gardens fruit trees are carrying heavy crops of fruits, and in such cases the branches should be supported to prevent breakage. See that all heavily cropped trees are well supplied with liquid manure, or mulched with good manure, and then thoroughly deluge the soil with water; this is very important, both for improving the size of the fruits and for helping the trees to build up strength for next season's crop. Bush trees and others should not be overlooked in this respect.

Wall Trees.—Examine the roots of all wall trees bearing good crops of fruit, and if they are dry, supply them with an abundance of water or liquid manure at once, so that they may benefit before it is too late for them to do so this season. Notwithstanding the heavy rains which may fall, the roots of wall trees are very liable to become dry.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P.,
Ford Manor, Lingfield, Surrey.

Early Peaches.—Where the lifting or root-pruning of trees in early houses is contemplated, active preparations should be made for carrying out the work. Where exhausted trees have to be replaced by those from open walls, the operation must stand over for the present, but few would trust such trees to give Peaches in May, when a transfer from a successional house is so easily managed, and this latter tree can be replaced from the open walls. Light root-pruning, or root-lifting, is now reduced to a fine art; the work is quickly performed and the small quantity of fresh soil required may generally be found by those who know and appreciate its value. Stiff, calcareous loam from an old pasture or roadside contains nearly all the essentials for the production of healthy wood and the finest fruits. If too heavy it may be corrected by the addition of burnt clay and lime rubble, lime being absolutely necessary to the formation of the stone in the fruits. If too light, dry, pounded marl will give " body " to the material which may be fortified by the addition of bone meal or a small amount of decomposed manure, but the last should be used only in extreme cases of poverty, as it is better to give the necessary food by mulching and feeding when the fruits are developing. Good drainage—the first and most important item in the formation of all fruit tree borders—should be secured, allowing a depth of twenty-four inches for heavy soils and up to thirty inches for light soils; there is no need to dig deeper as it is better to keep the roots near the surface than allow them to descend, as they will when mulching, and feeding are neglected.

Successional Houses.—Trees cleared of fruits in July or early August will have ample time for ripening their wood, but they must receive plenty of air night and day, be kept thoroughly moist at the roots by copious waterings, and treated to liberal syringings on fine evenings. Persevere in the removal of all breast wood from trees ripening their crops of fruit and pinch out the points of shoots which will be cut away later. Gather the fruits early in the day when dry and cool and—for home use—twenty-four hours before they are needed, as once they become dead ripe on the tree, they are generally past their best for dessert purposes.

Late Houses.—Trees that are carrying heavy crops of fruit in late houses will be exceptionally useful this season owing to the scarcity of Pears and will help to keep up a supply of fruits until the end of September. These trees should be kept thinly trained, no shoots being retained unless they are needed for next season. Late trees should be grown in sound loam, not over-rich but made thoroughly firm so that the roots have to work for their sustenance, otherwise thorough ripening of the wood, which is essential to success, will not be achieved and liquid manure and artificial fertilisers will be wasted.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Papaver nudicaule.—Seeds of Iceland Poppies and of the new Sunbeam and Coonara Poppies, should all be sown during August or early September for flowering next year. They may be sown in boxes in cold frames, afterwards pricking out the seedlings and, when large enough, planting them in their flowering quarters; or they may be sown directly in the open ground—where they are required in quantity for a supply of cut flowers this is undoubtedly the best method, especially with the commoner and less expensive strains. Sow the seeds thinly in the reserve garden, afterwards thinning the seedlings to one foot apart in the lines; grown in this way, without any root disturbances, fine plants are produced which provide a wealth of material for decorative purposes.

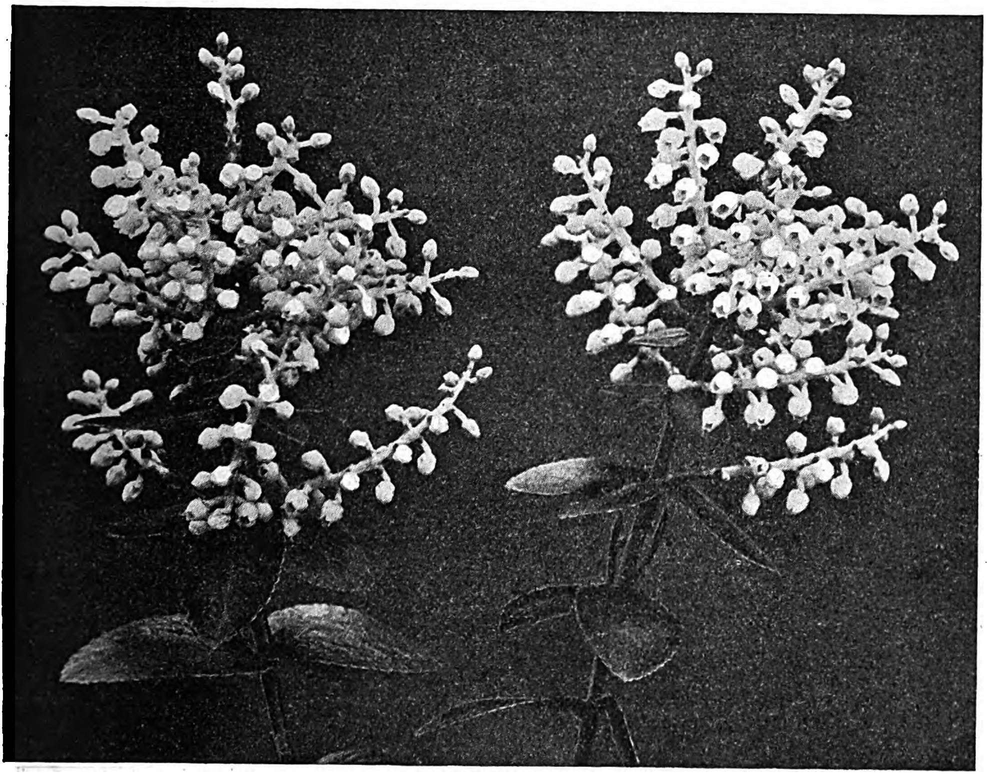

FIG. 60.—GAULTHERIA OPPOSITIFOLIA.
(see p. 148).

Antirrhinums and Pentstemons.—Care should be taken to cut out old flower spikes; this is very important, for, if allowed to remain on the plant and produce seeds, they retard secondary growth and successional crops of flowers. The many fine varieties of Antirrhinums now come so true from seeds that it is unnecessary, as in the past, to increase any particular variety by means of cuttings, although this method may still be used where a pure stock is necessary for a colour scheme. Where Antirrhinums are required for an early display next year the seeds should be sown during August or early September; the young plants should be placed in their flowering quarters in time to become established before winter. Small, sturdy plants are most likely to come through the winter successfully. In damp, low-lying situations it may be necessary to winter Antirrhinums in cold frames or pits. Pentstemons planted in the reserve garden for stock purposes, should not be allowed to flower, the aim being to secure a fine crop of cuttings for propagating.

Bedding Arrangements. — While summer bedding plants are at their best is the proper time to sit in judgment on the present arrangements, and consider what improvements or changes may be made for next year. It is important to make an early decision on this matter and thus allow plenty of time to propagate the necessary stocks, as with many subjects this must be done towards the end of August or beginning of September. When planning bedding arrangements their character and style will to a certain extent be determined by the lay-out of the garden and its immediate surroundings. It may have to be formal in character if the garden and surroundings are laid out in formal style, and this, to a certain extent, may restrict the choice of subjects. Where a garden is less formal in character or consists of a more or less isolated series of beds, a much wider variety of plants may be used. Generally, bedding arrangements should be as simple as possible, but in this connection the taste and wishes of the owners must be considered. In making new gardens or beds it is very important to keep the shape of the beds as simple as possible, as this greatly facilitates working operations of all sorts, from mowing to digging and planting.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Layering Carnations.—It is not yet too late to layer Malmaison and border Carnations, but the work should be proceeded with at once in order to produce useful plants for potting up towards the end of September. Souvenir de la Malmaison Carnation has lost its popularity in comparison with the perpetual-flowering race, and the reason is not far to seek, as the former, like the border type of Carnation, can only be depended on to produce one crop of flowers annually, and although these are very beautiful in their season, the blank of nine months which they leave to be filled up by the perpetual varieties is telling against them every year. Some praiseworthy attempts are being made to evolve a perpetual-flowering type of both Malmaison and border Carnations, but the results for one reason or another, have not yet become very successful. When the layers have been securely pegged into position and the sandy compost mounded up and well watered, a watch should be kept on them in case birds attracted by the new soil or the moisture, begin to scratch and work among them, leaving the stems exposed. Should this trouble be very pronounced it may be necessary to use old nets to exclude the birds.

Gladioli.—These beautiful flowers are now being used freely in bedding arrangements and are amongst our most handsome autumn flowers. They are best grown in fairly large beds and interplanted with dwarfer and bushier companions, such as the early-flowering Chrysanthemums or the dwarf bedding Dahlias now so popular, as the tapering spikes of the Gladioli, rise above the other occupants of the bed and their foliage also helps to prevent a flat effect. The primulinus section is well worth the greater attention it is now receiving, both for supplying cut flowers and for grouping in beds and borders, as small, hooded flowers are fairly widely spaced on the spikes and not so stiff as the large-flowered varieties. Where the latter are intended for exhibition purposes great care is necessary to protect the spikes from damage by the weather, and some ingenuity has been shown by growers in producing suitable glass fronted cases for this purpose; needless to say, none of these should be permitted in the garden, but kept in the reserve ground, well out of sight.

Amaryllis.—This large and interesting family is represented at the present time by the well-known A. Belladonna, whose pink umbels surmounting a stalk two to three feet in height, arise directly from the apparently dormant bulbs. These plants are best grown in full sun, either in front of glasshouses, or at the foot of a south wall, where they may be expected to become thoroughly ripened each season. Where Habranthus pratensis, now known as Hippeastrum pratense, is grown in the open border, the present is a most suitable time to lift, separate and replant, but only where absolutely necessary, as this flaming beauty resents disturbance, and if doing well is best left alone.

Nerines and Vallotas.—The Nerines are developing their flower spikes, and N. Bowdenii has been most successfully grown by several gardeners in our south-western district in the open, and although not yet tried here, there is no doubt that it will be ere long. The Scarborough Lily, Vallota purpurea, is another bulbous plant which might be tried outside with every prospect of success, as it is comparatively hardy, and if given a light soil it would probably come through our mild winters equally as well out-of-doors as it has done during recent years in cold houses.

Onions, Cauliflowers, etc.—The sowing of many kinds of vegetable seeds, such as Onions, Spinach, Cauliflower, Lettuce, Parsley, etc., should now be made, in order to have the plants well-established before winter sets in. At this season sowings should be made rather more thickly than in spring sowings; Onions, especially, seem to winter much better when growing close together in the rows. The Prickly-seeded form of Spinach is the best for withstanding the winter. The ground need not be further enriched for any of these crops, if in fairly good heart, as it usually is after a crop of Potatos. Cauliflower and Lettuce sown now may, in most cases, require to be lifted when small and pricked out into boxes or frames where they may be protected during inclement weather, but a few of each should be left outside all the winter for trial, as our experience is that these often keep remarkably well, while Lettuces, especially from this sowing, provide splendid salading quite early the following year. Parsley is one of our most troublesome crops, as a rust attacks the roots and renders the plants useless, especially from spring sowings, but if sown now on firm land, it appears to escape the worst ravages of this trouble, and provides a good crop of garnishing material.

ORCHID NOTES AND GLEANINGS.

VANDA TERES.

This is a most beautiful Orchid and one that flowers freely during the summer when well-grown. It requires special treatment to induce it to flower regularly, as it makes its growth rapidly during the hottest part of the year; hence there is no great difficulty in satisfying its requirements.

So soon as the flowering period is over growth begins, when the work of repotting should receive attention. When growing this Orchid it is advisable to fasten the stems to light teak rods, or some other hard wood, to which the roots may attach themselves. The stakes should be fixed firmly in a pot, which should be filled two-thirds of its depth with crocks for drainage, filling the remainder with clean, chopped Spaghnum-moss pressed firmly.

The stakes should be of sufficient length to allow for eighteen inches or so of growth. The plants may either be placed singly in pots or several together to make large specimens.

Where sufficient plants are grown, it is a good practice to plunge the pots in a bed of live Sphagnum-moss, as then constant moisture and efficient drainage are maintained, and if the bed is provided with bottom heat so much the better.

Vanda teres should be grown close-up to the roof-glass, and be frequently syringed with tepid soft water to encourage free, rapid growth. Established plants need no shading and on bright days in summer the temperature may be allowed to rise to 100° to 110° F., which, with abundance of atmospheric moisture will create conditions under which this plant revels.

When growth is completed the temperature and the humidity of the house should be gradually reduced, and only sufficient water given from time to time to prevent shrivelling, keeping the plants still exposed to all the light possible to consolidate and ripen the newly-made growths.

During the winter the plants are best rested in a dry house having a temperature of 55° to 60°.

Of the special forms of this beautiful Orchid Vanda teres alba and V. teres gigantea have been awarded First Class Certificates by the Royal Horticultural Society, while V. t. Gunnersbury Park variety has received an Award of Merit.

CATTLEYA WARSCEWICZII.

The different varieties of this most useful Cattleya generally produce their flowers in July and August, but it is not unusual for flowers to appear in May and June, so that the flowering season of this grand species covers nearly one-third of the year, and at a season when Cattleya flowers are scarce.

It is to a few select varieties of this fine Orchid that I particularly wish to direct attention. The geographical range of the species is considerable, but in spite of this the forms brought from the different localities resemble each other closely, so that when a particularly distinct variety appears it is extremely valuable to the hybridist. In the past, the different albino forms of the various species were much sought after and greatly prized, but now, by a careful selection of parents, these are as easily raised as the coloured forms.

The numerous white forms of Cattleya Warscewiczii, although not strictly speaking albinos, have been the parents of a race of lovely hybrids which produce flowers with pure white sepals and petals, and highly coloured lips, a combination considered impossible in the early days of raising Orchids by artificial means, when the colour of the lip was expected to effect the whole flower.

Many hybrids from the typical C. Warscewiczii had been raised before the introduction of C. W. Frau Melanie Beyrodt in 1904, but this has proved one of the best parents.

Amongst the most popular of the hybrids raised from this variety are C. Hardyana alba, C. Dionysius alba, C. Haroldiana alba, C. Enid alba, C. Hestia and many Laelio-Cattleyas.

C. Warscewiczii alba (Firmin Lambeau), a pure albino was introduced about 1912, when it received a First Class Certificate from the Royal Horticultural Society on July 16 of that year, and caused a great sensation at that time. The first hybrid from it, Cattleya The Bride, appeared in 1919, but this particular form has not been grown to the same extent as some of the others. Amongst the most distinct varieties besides those mentioned are C. W. Mrs. E. Ashworth, C. W. Low's var. C. W. limbordiensis, C. W. Othello, C. W. Rosslyn var. and C. W. White Queen.

C. Warscewiczii and its hybrids are best repotted soon after their flowers are over, in the ordinary Cattleya compost, keeping the plants on the dry side until they are well rooted. During their season of active growth they enjoy a slightly warmer position than the majority of Cattleya species. *J. T. B.*

FLOWER GARDEN.

ANNUALS.

While some of the most popular annual flowers have been very poor during the present season, others have been noticeable for their sturdy growth and wealth of bloom. Asters are almost a failure owing to persistent attacks of stem-rot. Ten-week Stocks are not good; some of the plants have died, while others have made abnormal growth and become unwieldly. This applies to plants growing in various positions and in both manured and unmanured soil. The growth of Dianthuses of the Heddiwigii section, treated as annuals, has been stunted and few flowers have been produced at the time of writing, August 8.

Antirrhinums grew very slowly after being planted but are now growing freely and producing a wealth of bloom. Zinnias, on a sheltered border, produced some fine flowers, but the plants are not growing freely, nor forming that branching habit which is the prelude to a continuous show of bloom during the autumn. Wet weather has caused some of the flowers to decay, and where these have not been removed the stems have rotted and the plants collapsed.

It is pleasant to turn to subjects which are giving every satisfaction, and noticeable amongst these are the Nemesias. A strain which has proved very serviceable for beds is the new dwarf Rainbow, which was Highly Commended at the R.H.S. trials in 1926; this type of Nemesia can be confidently recommended. Statice sinuata has grown freely and is now commencing to flower. African and French Marigolds are very good, although growing in positions not wholly favourable to their full development. Some are planted in a border in front of shrubs, others in a bed carpeted with Viola Maggie Mott which has grown somewhat rampantly. Annual Chrysanthemums sown on a sunny border during March have provided abundance of material for cutting. Nigella Miss Jekyll has been conspicuous on the same border, while Lavatera Loveliness, a very richly-coloured form of Lavatera rosea splendens, is fine, the glowing flowers and bronze stems combining to make this Mallow very effective for indoor decoration. Stems may be cut from two to three feet in length.

Helichrysums of a refined pink shade are admired; these Everlasting flowers are best cut before the flowers are fully developed. The strong-growing Godetias have been useful for cutting; some of the new shades found in this annual are very pleasing and distinct, notably those in lavender and pink. Long spikes which carry fifteen flowers, or more, and which will last for several days when cut, are very useful. Sweet Peas grown on the single-stem system have produced good flowers, but the foliage of the plants has suffered from the effects of cold and windy weather, so that many of the leaves are now yellow and sere. *C. Ruse.*

CAMPANULA SPECIOSA, POURR.

I was a good deal puzzled when collecting on Monserrat (Barcelona) last spring, by a large, handsome-looking species of Campanula. It grew sparingly on limestone cliffs, about half way up the mountain, and a few specimens were also growing in coarse scree. The plants were not then in flower, but several still carried skeletonized flower spikes of the previous year, and there were some of them so much as two feet high, suggesting something in the nature of a Canterbury Bell. Yet the species was obviously and definitely perennial. I had never seen a Campanula like it.

The cliff-dwelling specimens hung from the crevices with long, finger-thick stems that were evidently a great age, for the "trunks" were thickly clothed with the matted remains of past generations of dead foliage. They sprawled and dangled down the cliffs a foot and two feet in length—a most interesting sight. In the scree-haunting specimens the "trunks" were usually buried in the downward drift of the coarse rubble.

I brought home a dozen or so roots of this remarkable plant, and these were readily established in pots and in the open rock garden, and quite soon each specimen developed a rosette of long, narrow leaves, roughly suggesting the foliage of Campanula grandis.

In July some of the specimens pushed up flower spikes, and by the end of the month I was able to form an opinion of the possibilities of this Campanula. This opinion was far higher than I had dared to hope. It was not to be expected that plants so recently collected would flower with the vigour and splendour of the great skeleton spikes I had seen on Monserrat. That splendour should be reached and surpassed in future cultivation, when the plants are fully established and can blossom after a whole season of unchecked growth. But the flower spikes I did have were not merely promising but definitely handsome and attractive. The best rose to eighteen inches in height and was strung from top to bottom with large, shallow, cup-shaped blossoms, as large as those of Campanula grandis, or possibly rather larger, but not so shallow. The colour was a fine, luminous, lavender-blue.

The outline of the whole inflorescence was less pyramidal than that of the wild specimens I had seen, and therefore less impressive, but this, no doubt, was due to a certain extent to stunting, a result of transplanting and travel. Given a fair chance, C. speciosa should make a remarkably handsome plant, either for the herbaceous border or for the bolder parts of the rock garden.

I was able to send a flowering specimen to Professor Wright Smith at Edinburgh, who stated that it is Campanula speciosa, Pourr. Apparently there are at least three plants to which the name of C. speciosa has been given, and doubtless my plant is the true C. speciosa.

I have grown a plant labelled C. speciosa at Stevenage, like a small Canterbury Bell; a good plant, as Canterbury Bells go, and, as Canterbury Bells go, it went, being biennial. I took a hurried look through Farrer's *English Rock Garden*, but my true C. speciosa does not appear to be mentioned or described there.

For some little time I shall be beyond the reach of serious books of reference, though I look forward to being found by—from time to time—copies of *The Gardeners' Chronicle*, and I should therefore very much enjoy finding a note in these pages on the various C. speciosas, both the false and the true!

It is surprising that so handsome a plant and one so easily established and grown should be so little known. It would be interesting to know if it was in cultivation in England at the time of my collecting it, and it would be very interesting, if anyone grows it, to learn their experience of the plant.

Campanula speciosa, Pourr., the true perennial species, promises to be as good a seed-bearer as the false, biennial C. speciosa, and I think too, it will not be difficult to increase by root cuttings. *Clarence Elliott.*

ALPINE GARDEN.

SYMPHYANDRA PENDULA.

A native of the Caucasus, this hardy herbaceous plant is well suited to the rock garden, or failing that the front of the herbaceous border. Free of growth, it forms a large rootstock from which arise masses of long-petioled, ovate or heart-shaped, velvety leaves. The branched flower stems are sometimes erect, but are usually semi-prostrate or pendulous. They are hairy, and clothed with sessile, ovate and deeply serrated leaves. The large, drooping, campanulate flowers are creamy-white in colour and very beautiful, being produced freely during July and August.

Symphyandra pendula should be planted in deep, loamy soil, and if grown in the rock garden should be given a sunny site, above the eye level, in which position it will be seen to advantage. It usually ripens an abundance of seeds which germinate freely. This plant was a great favourite with the late Mr. Reg. Farrer, who waxed eloquent in his description of it; it is figured and described in *Sweet's Flower Garden*, Series II, t. 66. *A. G. F.*

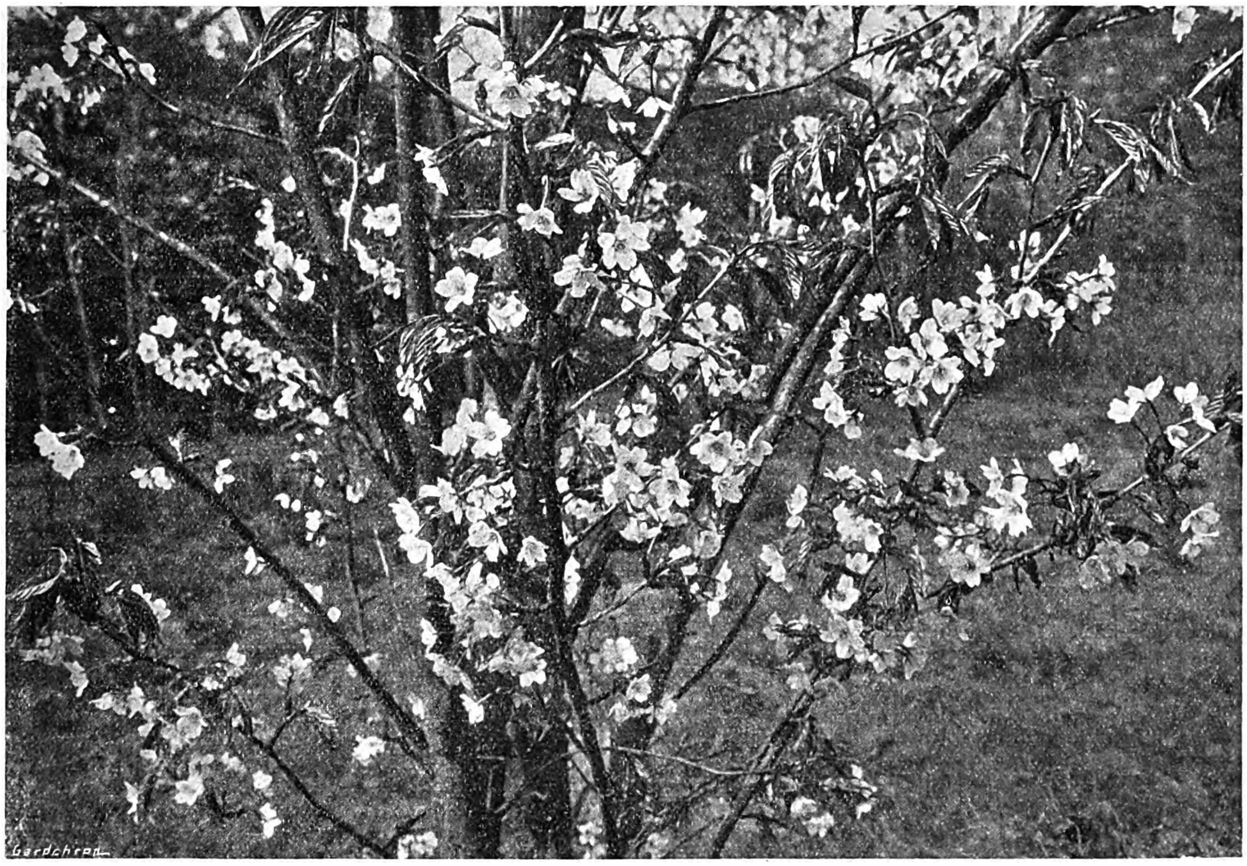

FIG. 61.—PRUNUS HUPEHENSIS.
(see p. 148).

SOME GREY-FOLIAGED ROCK PLANTS.

There is always a special attraction about silver or grey-leaved plants, as they contribute interest and brightness to the rock garden at all seasons; but in the late summer months when few denizens of the rock garden display their blossoms, these grey-leaved subjects contrast finely with the masses of green foliage which usually predominate.

Several of the Achilleas, notably A. ageratifolia, A. argentea and A. umbellata, have beautiful soft-grey foliage and are well adapted to sunny positions. Alyssum saxatile and its varieties citrinum and compactum are equally beautiful after as during their flowering season, because of their bright grey foliage. Androsace lanuginosa, A. sarmentosa and A. Chumbyi have handsome grey leafage which makes them highly decorative, either in or out of flower. Arabis albida and A. aubrietioides have also a decidedly grey tint in their foliage.

The genus Artemisia provides a wealth of silver-leaved plants, many of which are of too strong growth for the rock garden, but A. frigida is worthy of a place, its finely cut foliage being of dainty appearance and creating a graceful, silvery effect. A canescens is also an attractive plant but needs ample space and must be prevented from encroaching on others. A. sericea and A. lanata var. pedemontana are also valuable and will succeed in any ordinary well-drained soil. Acantholimon venustum is a handsome plant which builds itself up into a mass of grey foliage and looks particularly well when established in a crevice. Cerastium tomentosum has attractive grey foliage, but it is a spreading grower and frequently a danger to small, choice plants. C. alpinum lanatum is a much less rampant plant, and although almost green in the growing season, becomes almost enveloped with silvery, woolly hairs when the growing season has come to an end. Dianthus caesius, that fine British plant, gives dense cushions of pure grey foliage which remain attractive during the rest of the year after the clear, warm, pink flowers have passed, Erodium chrysanthum produces generous tufts of silvery, Fern-like foliage and is a fine plant. Draba scabra (syn. scandinavica), the flowering period of which extends to August, has beautiful grey foliage. Helichrysum bellidioides and H. trinervatum are neat little plants with silvery foliage as also is Leontopodium alpinum.

Hieracium villosum has distinct grey foliage, while Hypericum fragile and Linaria alpina are a beautiful glaucous green. Nepeta Mussinii is one of our most valuable grey-foliaged plants, and when established on a wall or in a crevice where it does not grow too freely, is a constant source of colour. Potentilla nitida is a choice little plant which makes a carpet of shining, silvery leaves. Most of the encrusted Saxifragas have grey foliage, their silvery rosettes being almost as beautiful as their flowers. Santolina incana is a grey foliaged plant of outstanding merit, and although too strong-growing for the rockery proper, positions may be found for it in the background with advantage. Raoulia australis makes a neat, glistening, silver carpet, and succeeds well on warm, sandy soil.

Other plants with grey foliage suitable for positions in the rock garden include Scabiosa Pterocephala, Pentstemon Davidsonii, Wahlenbergia pumilio and Zauchneria californica, while Papaver alpinum, Primula Auricula and several of the Sedums have foliage of a pleasing glaucous green. *A. P. C.*

DAPHNE CNEORUM MAJOR.

Lovely as is the typical Daphne Cneorum—despair of so many gardeners—still more delightful is the variety major, which appears to grow with more freedom and to be less subject to vagaries than the type. The latter is difficult to establish in some gardens and even when it looks accustomed to its conditions, may die off unexpectedly, but the major variety grows more freely and has a different habit. Instead of the straggling growths of D. Cneorum itself, it forms a neat bushlet, giving freely of its brilliant rosy, trumpet flowers, which are such a joy to the plant lover.

D. Cneorum major is not too common, but it is really a fine plant, and deserving of a place in any rock garden. As for soil, I have seen both the type and the major form doing well in stiff loam without any lime, but those who have trouble with either might well try the lime treatment recommended by the late Mr. Farrer. Leaf-soil and lime in some form are what he suggested and his experience is always worth taking into account in considering the ways and means of cultivating troublesome but exquisite alpine flowers. I have seen D. Cneorum and D. C. major thriving well in sun or shade, although partial shade would seem to be the ideal condition. *S. Arnott.*

TWO CHINESE CHERRIES.

RELYING upon the synonymy used by Wilson in his *Cherries of Japan* (p. 29), I originally associated the Cherry he had collected in Hupeh, Western China, with the indigenous species of the central provinces of Japan, and furthermore, suggested that it might belong to the form called by Miyoshi, Prunus mutabilis stricta (*c.f.* my "Notes on Japanese Cherries," *Journ. Roy. Hort. Soc.*, Vol. L.). I remarked, however, that it was "markedly different from my imported Japanese seedlings."

With increased knowledge, this difference became even more apparent. When I wrote the above-quoted article I had not had an opportunity of critically examining the Japanese Hill Cherry in flower, but during my recent visit to Japan I saw many thousands of them growing naturally or under cultivation, and am now convinced that the Hupeh Cherry (Fig. 61) is sufficiently distinct to be given specific rank. It has several characteristics which are readily observable in life, though probably difficult to detect in herbarium specimens. Of these the uniform pink colour of its flowers is, perhaps, the most important. In the Japanese Hill Cherry the blossom is almost invariably white, the petals in freshly opened flowers being only very occasionally stained with pink. The two plants are also of different habit, the Hupeh Cherry having more upright, twiggy boughs, which are paler grey, while in the autumn the foliage turns to a darker hue and dies off a deep wine-purple colour.

The leaves of the Hupeh Cherry resemble those of the true Prunus serrulata of Lindley in form, colour and texture. The blade is generally narrower, smaller and more elliptical than in P. mutabilis, and is of a paler green shade. For this Hupeh plant I suggest the name P. hupehensis. Type locality: Chang-yang, Hsien Woodlands, Western Hupeh (seeds collected by Wilson, No. 349). It is a highly ornamental tree, both in spring and autumn, and is of considerable garden value.

In *Plantae Wilsonianae* (Pt. II, p. 209), Koehne described another Cherry, likewise collected by Wilson in the Chang-yang Hsien woodlands as Prunus tenuiflora. This plant Wilson has also merged with the Japanese species. The only specimen of P. tenuiflora in my possession (a descendant of a plant raised at Aldenham from seed No. 3A) is quite distinct, from anything I saw in Japan, and in my opinion Koehne's name should stand. This Cherry has pink flowers, relatively large, rugose leaves (which, together with the rest of the shoot are densely downy when young) and persistent foliaceous bracts on the fruiting stalks. *Collingwood Ingram.*

PYRUSES AS STREET TREES.

WITH garden cities and new housing schemes springing up throughout the country, the problem of suitable trees for modern streets or roadways is one that is causing public authorities some anxiety.

Trees that were planted from thirty to sixty years ago in streets and high-ways are often a public nuisance. In many cases they are situated on the pavement edge, and when the gas, water or cable companies come along, each digging its own track, the result is that all the roots on the pavement side are cut and the tree deprived of nourishment from that quarter. The roadway at the time of their planting was probably composed of rolled-in metal, through which a fair amount of rain water could percolate. Such roads have now been covered with bitumen, or some such substance, forming an impervious surface. Under these conditions any tree with an elaborate root system fails, and becomes a public danger through dead branches and instability at the roots. Such trees as Beech, Lime, Sycamore and Elm require a lot of head room, and their overhanging branches interfere with overhead wires and obstruct the light from occupiers of houses in the vicinity, while the litter caused by falling leaves is a source of constant complaints.

The ideal street tree is one that does not produce heavy limbs and spreading branches, yet it must be fairly rigid, not easily damaged by wind, and respond to pruning and trimming. The falling leaves should not cause any greasiness to the road surface, such as those of the Lime are apt to do. Moreover, the ideal tree must be able to withstand a smoky atmosphere and yet be decorative and shapely while requiring a minimum of attention and subsisting in a restricted root run.

Many of the Pyruses are suitable, provided the soil conditions are good. Most of them are not in the least fastidious as to soil and grow well amidst city smoke, and are most decorative. In certain varieties the leaves are beautiful and there is a profusion of flowers, while in the autumn the clusters of bright red or yellow fruits, and the brilliant colour of the leaves are added attractions. In fact, they are so attractive that children and older folk often break off the flowering or fruiting branches. Probably if they were more grown the residents would accept them as part of their everyday life and leave them alone. Pyrus used for street decoration should, so far as possible, be raised from seeds. Many of the finest varieties are propagated only by grafting or budding, and in most cases they are not to be recommended for street planting. The stock usually employed for that purpose is P. Acuparia (Rowan), and it is a a very bad one for suckering. Any variety that is top-grafted is useless for street work. Where the union is several feet high a large swelling usually appears, and above it the stem is much thicker than below, giving the tree a top-heavy appearance. Below the union the stem has a hide-bound appearance and it requires constant attention in staking, being unfit to stand by itself.

Trees planted in streets should have at least eight feet of clear stem, and as they grow up the bottom branches should be removed until twelve feet to fourteen feet of clear stem is obtained. This pruning should not be done too hastily as any hurry in this respect reduces the sturdiness and rigidity of the stem.

Pyrus Aria, or Whitebeam, has an average height of thirty to forty feet and is a native tree. Mr. Bean, in his *Trees and Shrubs Hardy in the British Isles*, states, "there is no tree more characteristic of the chalk hills of Britain." Here it grows remarkably well in soil that is in no way calcareous, provided the site is well drained. There are various forms, and all are attractive trees. Usually the leaves are large, oval in shape, two to four inches long and half as much wide, covered with a white down underneath, delightful glimpses of which are shown during a breeze. The young shoots, in the spring, are heavily felted, giving the tree a beautiful silver-white appearance. This is followed in May by large clusters of fragrant white flowers, and in the autumn the reddish-brown fruits and rich colouring of the leaves are equally decorative. The variety Majestica is the most effective; the leaves, while showing the usual characteristics, are more tapering and much longer, often up to seven inches long. The fruit is slightly smaller than in the type and of a brighter red in colour. When raised from seeds a large percentage show the true character.

Pyrus intermedia, the Swedish Whitebeam, is a tree of usually twenty feet to thirty feet high, and does very well in the city. The young, downy shoots and leaves are very attractive. Judging from the several thousand four-year-old seedlings here, it does not make such sturdy growth as other kinds, and greater care has to be given to the training of the young trees to ensure stout, straight stems. Here, it has proved itself to have a first-class constitution for town planting; it is shapely, flowers freely in May and carries red fruits in the autumn.

Pyrus latifolia (Service Tree of Fontainbleau), commonly known as P. rotundifolia, is a most interesting tree and of very fine appearance; the general shape of the head is all that could be desired, and in the writer's experience it promises to be the best tree in this class for street planting. P. latifolia is believed to be a hybrid between P. Aria and P. Torminalis. There are various forms of it, varying in the appearance of the leaves. The general outline of the tree, the way in which the branches radiate from the leading stem, and the root system, though quite distinct from those of other Pyruses, is the same within the type, no matter how much the leaves may vary. Of nearly 1,000 four-year-old trees raised from seeds here, two distinct types (in leaf only) are noticeable, and in the deciduous stage they cannot be distinguished. In the spring, the young leaves of the two types are distinct in character; in the one the leaves are ovate in outline, two inches to four inches long, nearly as much wide as long across the two wide marginal lobes at the base, the apex pointed margins jaggedly toothed, smooth, dark green above, covered beneath with greyish felt. The other type of leaf is felted on both sides while young; leaves roundish-ovate, margins not so jaggedly toothed and without marginal lobes at the base. The first type shows affinity with P. Torminalis, and the latter to P. Aria.

At the time of writing (July), one can hardly be distinguished from the other, as in both the terminal leaves of the current year's growth are identical.

P. Torminalis, or Wild Service, is a tree usually thirty feet to forty feet high. Unfortunately, there are no young trees here, although there are two fine specimens in one of the parks in the heart of the city. The flowers are produced in June in large corymbs and are very fragrant and white. The tree is in every way attractive, and the leaves resemble those of a Plane: indeed, I was once asked what kind of Plane tree it was. It is difficult to understand why P. Torminalis is not more grown, as it is a native tree, does well amidst city smoke, has a striking appearance and splendid habit, all making it a valuable tree for street decoration.

Pyrus pinnatifida, generally believed to be a hybrid between P. Aucuparia and P. intermedia, is found wild on the Isle of Arran. It generally makes a tree about twenty feet to thirty feet high, and has leaves of a very pleasing shade of green on the upper side, the under side being covered with a grey felt. The fruit of this tree is very showy, bright red and bigger than that of the Rowan. This splendid tree is like P. Aucuparia in the stem, but the branches are more ascending than in the Rowan.

Pyrus Aucuparia, Mountain Ash, or Rowan, is too well-known to need description. It deserves to be more extensively planted by the sides of streets and roads. *W. G. Robertson, Glasgow.*

TREES AND SHRUBS.

STAPHYLEA HOLOCARPA.

THIS deciduous shrub was first discovered by Professor Henry in the Province of Hupeh, Central China, but it was introduced to cultivation by Mr. E. H. Wilson, when collecting for the Arnold Arboretum. The leaves are composed of three leaflets, all finely toothed, and downy at the base beneath. The white or pinkish flowers are produced in broad corymbs. Flowering sprays of this species have been exhibited on several occasions at the meetings of the Royal Horticultural Society, and some of these have been shown by Mr. F. J. Hanbury, of Brockhurst, East Grinstead, whose largest plant is now about eight feet high, and is illustrated in Fig. 59.

GAULTHERIA OPPOSITIFOLIA.

ALTHOUGH Gaultheria oppositifolia was discovered by Sir Joseph Hooker nearly seventy-five years ago, it has not yet become popular in cultivation. It is a native of the mountainous regions in the northern island of New Zealand, consequently it is only suitable for cultivation in the British Isles in localities where the somewhat tender Rhododendrons are a success. In its native habitat it will grow so high as eight feet, but it rarely reaches this dimension in this country. The sessile, heart-shaped leaves are usually opposite, although sometimes they appear to be in whorls of three on the stronger flowering shoots. The little urn-shaped flowers are white and produced in terminal branching panicles. An illustration of this species was given in *The Gardeners' Chronicle* of August 10, 1912 (Fig. 43, p. 109), from a drawing by the late Mr. Worthington Smith. It was made from a specimen supplied by Mr. T. Smith, of Newry, to whose son we are also indebted for the specimens illustrated in Fig. 60, this figure being a reproduction from a photograph.

CLERODENDRON FOETIDUM.

This handsome shrub is hardy in favoured localities, although often killed to the ground level by severe frost, so it is often more herbaceous than shrubby. The pinkish or lilac-rose flowers are produced in August in dense terminal corymbs; the leaves are of considerable beauty, large, pubescent, cordate, acuminate, toothed, on slender petioles. The reddish colouring of the young terminal leaves in late summer is an attractive feature.

At Kew the plant is killed back to the ground every winter, but Mr. Bean in *Trees and Shrubs Hardy in the British Isles,* states that it sends up new shoots in summer up to six feet in height.

Clerodendron foetidum is armed with short, rigid spines, and when the leaves are bruised they emit an odour not unlike that of Almonds and, to my sense of smell, somewhat pleasant.

This plant is very handsome when doing well in a half-shaded, sheltered and somewhat moist situation. It was introduced from China in 1820, is synonymous with C. Bungei and is figured in *Bot. Mag.* tab. 4880. *Ralph E. Arnold.*

NOTES ON CONIFERS.

XXIII.—A New Variety of Cupressus lusitanica, Miller.

Several forms of this variable Mexican Conifer are cultivated in this country, especially in the mild climate of the west of England, where one often sees handsome trees of it. The variety here described has puzzled me for some years; it is based on a tree which has been growing since 1915, in the Crawley Nursery, on the Duke of Bedford's estate at Woburn, Bedfordshire. I obtained it as a small plant from Messrs. Hillier's nursery at Winchester, where it was cultivated as Cupressus Benthamii var. chamaecyparoides.

After eleven years' growth it is now a thriving, handsome tree about fifteen feet high, which bears numerous cones every year. We hope shortly to raise seedlings.

It is very distinct in habit, but is undoubtedly one of the numerous forms of Cupressus lusitanica, exactly resembling the variety filifera of Cupressus pisifera in its long, pendulous branches, which terminate in bi-pinnate divisions. The leaves are awl-shaped, and slightly spreading at the tips, larger and more spreading on the secondary branchlets; cones large for the species, up to three-quarters-of-an-inch in diameter. Miss Lister's careful drawing (Fig. 62) shows well the long, whip-like branches which characterise the variety. I have not met with it in any English garden, but Mdlle. Camus who some years ago gave to the world an excellent *Monograph* of the genus Cupressus, says she is familiar with this form, both as a subspontaneous and introduced tree in mid France. I propose to call this form Cupressus lusitancia var. flagellifera mihi, with the following diagnosis:—

Arbuscula habitu C. pisifera var. filifera similis. Ab C. lusitanica typica ramulis ultimis longioribus pendulis recedit. Woburn.

Analagous forms are Cupressus Lawsoniana var. filifera and Thuya orientalis var. pendula. *A. Bruce Jackson.*

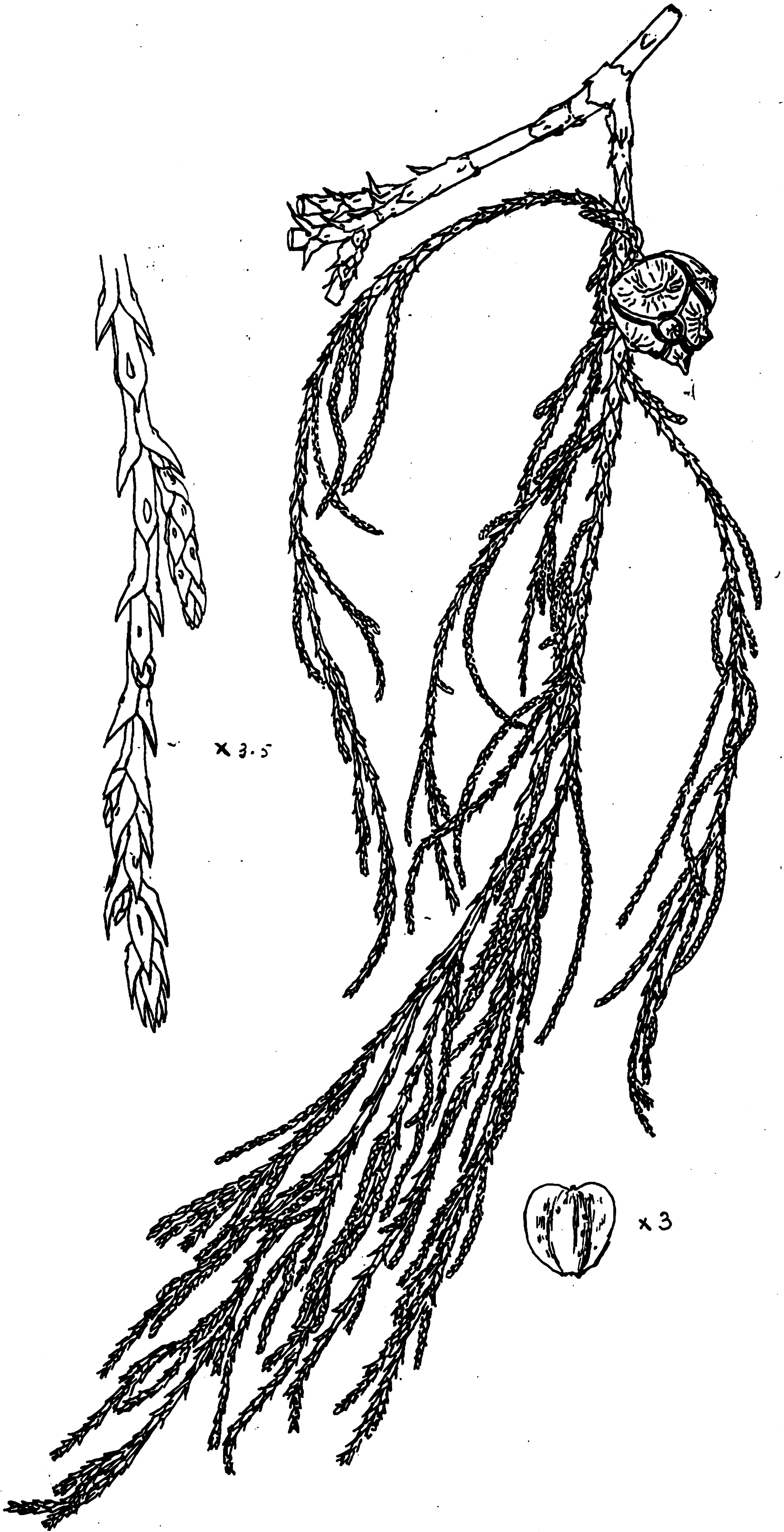

FIG. 62.—CUPRESSUS LUSITANICA VAR. FLAGELLIFERA. (Natural size).

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA*

XIV.—Domestic and Other Matters.

JULY began very wet at my camp, and I became restless and anxious to break new ground. From time to time the headman arrived from the village below, bringing me butter, milk, or a few mislaid eggs; once I even bought a goat from him for R.8. (about twelve shillings), and some small Potatos. The servants were alternately sick with fever, quarrelsome between themselves, or bolshevik with me; in fact, they became so whole-heartedly communistic that my stores and rations, began to dwindle at an alarming rate. Of course, it was impossible to lock up the rations, as my steel boxes were required for more valuable specimens and silver, and other steps had to be taken to stop the rot. In the selection of servants I had had little choice, so difficult was it to persuade anyone to come to these pestilential wilds, let alone stay there. They missed the bazaar chat, the company, the dancing girls and the picture palace at Myitkyina. But my aim had been to engage a job lot, who were likely to be mutually repulsive, as there was then less opportunity for combined general action against me. Thus my Kachin body servant, Laphai Noung; Burmese cook, Maung Ba; Nung *chokara* ('little boy'), and Nung coolie, were fully up to specification, and all hated each other with a truly unbrotherly affection; but the full advantage of this was somewhat discounted by the fact that they spoke a common language amongst themselves in the lingua franca of the country, namely Kachin, of which I understood not one word. As for Maung Ba, the bad man, he could conspire in Ming (of which Laphai was ignorant) and swear to himself in Shan.

From time to time I had to send my coolie down to the base camp for something or other, but the order had to go through Maung Ba, who had a playful way of adding an order, as from me, of course, for a tin of tea or a bottle of rum on his own account. Not that that mattered much, so long as peace and order were maintained, but the practice led to blackmail and much mutual recrimination, because Maung Ba had no desire to share his triumphs with lesser fry, and the lesser fry revenged themselves by turning King's evidence. In short, my plan worked admirably; I never have had a staff who lost so little love amongst themselves. I let them hate each other, but chid them unmercifully if they ever pointed hate in my direction. The jobs they had to do for me were not very exacting, but I did insist on the following: meals at the recognised hours, with enough to eat, the food clean and as pleasant looking as circumstances permitted; warm, dry clothes so soon as I returned from a climb, and dry clothes to put on in the morning. The fire kept up in my hut, and a plentiful supply of fire-wood; the hut tidied and swept while I was out; the roof kept watertight, and my bed made. The plant paper changed every day, and a supply of dry paper always available. Whatever else they did or left undone, the above programme had to be carried out daily, otherwise there would be strife. In that climate, much of the work resolved itself into cutting and drying fire-wood in sufficient quantity. Meanwhile, I had made casual enquiries of the headman as to how far it was to the Lohit river, on the other side of the range, what were the conditions, and so forth; I intended to go there, but assumed an air of complete indifference, because whenever I mentioned the Lohit, he looked at me with a quizzical air, and spoke with a certain awe, as though it were a most desperate enterprise; and of course, most of the tribes do look on Tibet as a sort of Arabian Night's entertainment.

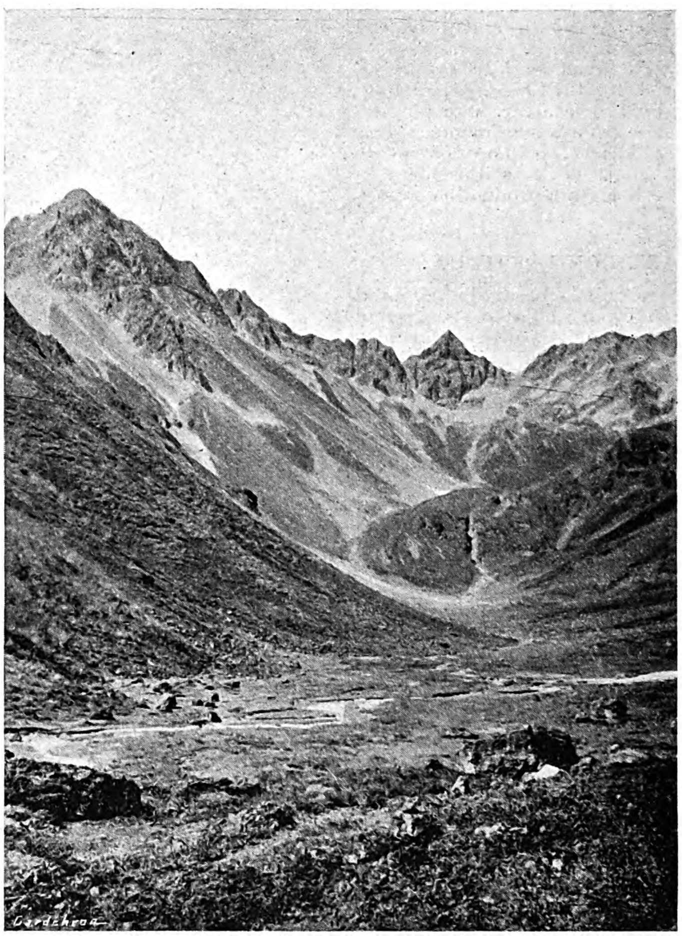

FIG. 63.—AT THE HEAD OF THE BRANCH VALLEY, UPPER SEINGHKU; 12,000 FEET ALT.

Lapponicum Rhododendrons scattered over the sandy floor of a silted lake.

The headman had promised me transport for the journey, but always it was coming to-morrow, never did it actually come to-day. Meanwhile, I was waiting for a letter from the Burma Government, to whom I had applied for permission to return to India by this route; but first the Government of India had to be consulted and sanction sought from the other local government directly concerned, namely, Assam. All this took time, but it was advisable to do the thing through the proper channels, and as I had good reason to believe that permission would be granted, there could be no harm in crossing the Diphuk La and dropping down to the Lohit on a preliminary reconnaissance, thence returning to my camp in the Seinghku valley. July was selected as the best month for the purpose, because by that time I had found most of the good things in the Seinghku valley; and if I put it off any later, there would be nothing left in flower on the other side.

During the first week of July the big Meconopsis flowered and proved to be a new species of the 'Grandes' group. The large, nodding flowers are borne singly in the axils of the leaves all the way up the stem (except at the extreme base) forming a column six feet high. Thus the habit is more like that of the single-flowered form of M. paniculata than of M. Wallichii. The petals are bright violet with a silky sheen, the anthers golden yellow and, though biennial, Meconopsis violacea (K.W. 7207) is a fine plant.

Much earlier than this I had seen a Meconopsis in fruit on the barer gravel patches amidst dwarf Rhododendron, which clothed a steep, exposed slope, M. impedita, I thought—a plant scattered over the mountains of Sino-Himalaya from Szechuan to the gorge of the Tsangpo. A little later I met with odd plants in flower, and the flowers were red, but I regarded them as abnormal. However, in July, up the valley between 11,000 and 12,000 feet altitude, every scree was dotted with the plant, which sent up a little shower of ruby, or port-wine coloured flowers, each nodding on a single, wiry stem; and when a chance sunbeam drove through it, the flower shone absolutely scarlet. It was certainly a most beautiful thing, though my delight was sobered by the discovery that, like M. impedita itself, it forms a deep tap-root which goes far down into the scree, being usually two or three times as long as the plant is high; a sure sign of difficulty in cultivation. Curiously enough, after most careful camparison, I am unable to find any good character by which to separate this plant (K.W. 6974) from M. impedita itself, and am therefore naming it variety rubra. It is a plant worth persevering with, and coming from much lower altitudes than true M. impedita it may, of course, prove much more easy to handle.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, and July 30, 1927.

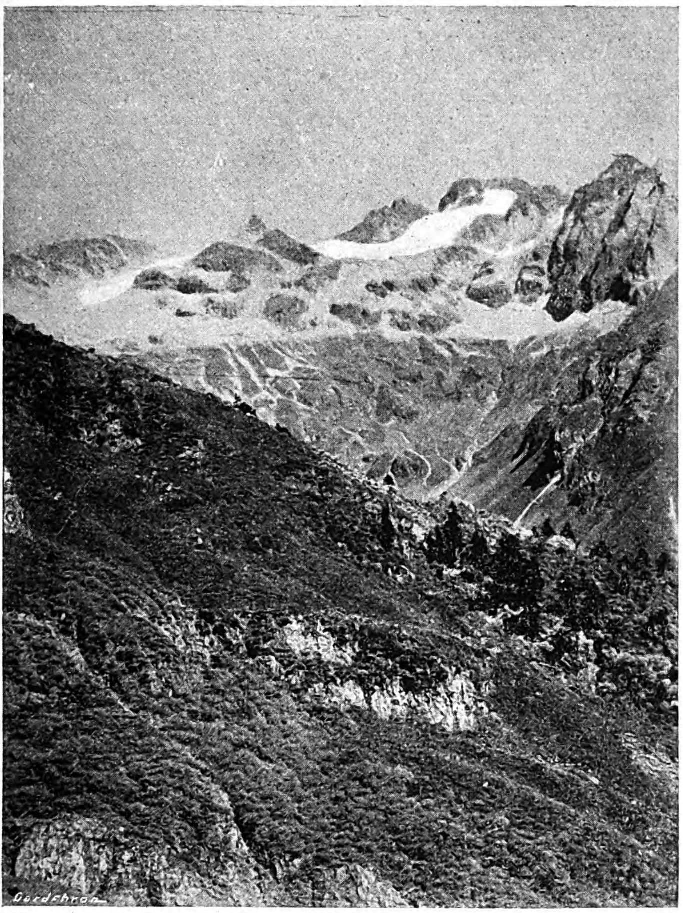

FIG. 64.—SUMMIT OF THE RANGE; IRRAWADDY-BRAHMAPUTRA DIVIDE; 16,000 TO 17,000 FT. ALT. SCRUB IN THE FOREGROUND.

One day, I decided to tackle a great, bare-looking cliff which I could plainly see from my camp, up the branch valley, as there might be something in the glen at its foot. So I went up the cattle path and came to a big torrent, which stopped me. A little higher up stream was a snow bridge, which looked none too secure, nor was it, for it gave way so soon as I stepped on it, my foot going right through, and I scrambled out just in time. Being unable to cross the torrent, I followed it up, till I came to a waterfall, and turning aside, climbed through a dense tangle of dwarf Rhododendron on the flank.

After some difficulty, I at last reached the valley above, and keeping along the base of an enormous cliff, to avoid the tanglement below, found a grassy slope absolutely violet with a fine Primula of the 'Petiolaris' type. From a big crown of leaves it sent up, like an enormous Primrose, an incredible number of flowers, each on a stalk. It grew in sheets of vast extent in the sticky, black loam of the steep gravel slope at the foot of the cliff, becoming more abundant towards the base where the soil was deeper; indeed, where the underlying gravel came through the top soil it was replaced by a very different species, namely, the elegant little jewel called P. silaensis, or 'Claret Cup,' a near ally of 'Cherry Bell,' found in Tibet in 1924. The 'Amethystina' Primulas are gems of the first water, but difficult beyond words. The drifts of 'Claret Cup' swinging and shaking their tiny bells, clustered in twos and threes on thread-like stems, as the dense mist came lashing up that slope, were an unforgetable sight, and close by were cushions and carpets of the 'Violet Primrose' (K.W. 6928). This last is related to the Chinese P. sonchifolia, and also to the better known P. Winteri, though the colour is much deeper than in the last-named. But the 'Violet Primrose' is a true alpine from 13,000 to 14,00 feet, and is not, like P. sonchifolia, found in the forest; a fact which may be to its advantage in this country. It is a plant which might grow in the bog so long as the soil is not acid. I noticed one or two white flowered plants. At the foot of the slope were strewn a few boulders, on which grew scattered plants of a pretty pink 'Nivalis' Primula, a species closely resembling P. calliantha. The boulders were thatched with flaming mats of Rhododendron repens, and the Primulas bobbed up amidst the fire, making a wonderful colour combine, washed by the violet seas of the 'Petiolaris' Primula.

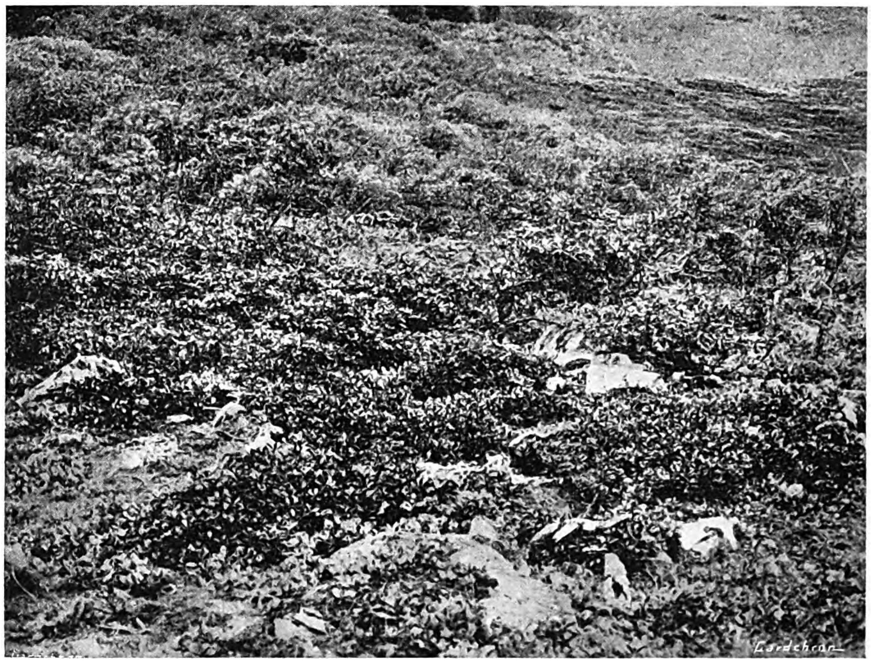

FIG. 65.—RHODODENDRON SCARLET LETTER, K.W. 6955.

This forms domed cushions on the hillside at 12,000 ft. alt.; Upper Seinghku Valley.

It was a most awful day, and the rain stung; also it was bitterly cold, and so thick that I could not see where to go next or how to climb the cliff to reach the head of the valley. Eventually I climbed a precipitous gulley, not knowing in the least where I was going, except that it was in the right direction, more or less, and presently found myself on a lofty ridge almost above the plant line.

Descending the other side, I came upon colonies of the tiny, violet Primula kongboensis, and tuffets of dwarf Rhododendron; and lower down I found the feeble blue flowers of the flimsy, dwarf, Meconopsis lyrata. But it was not till I reached the foot of the cliffs (having nearly come to grief on a steep new slope) that I found another really prize plant. There was an open meadow here—it was really a gravel scree, but for a couple of months at any rate, the sheltered slope of the cone was so thickly overgrown with coarse herbaceous plants that 'meadow' best conveys the appearance of it; and amongst the flowers were Nomocharis pardanthina, Meconopsis Baileyi, Primula sikkimensis, and many others. And suddenly I caught sight of a deep, port-wine-red Meconopsis, and then another, and another. I was thrilled; this was something new in my experience. The flowers were a rich red right through; no spots or streaks or rash of any sort, on stems shorter than those of N. pardanthina; also there were only two or three flowers on each plant.

I dug up a bulb; it was a good six inches down, in very coarse soil—gravel, in fact, with a mixture of humus near the surface derived from decaying meadow plants. One could knead this soil like dough almost, and evidently it contained a fair proportion of clay; in fact, I did actually make a ball of it.

Now Nomocharis generally grows on a talus slope, or, at least, on a slope of some sort, below cliffs composed of gneiss or granite containing plenty of felspar, or other aluminium double silicates, which on decomposition would form clay; hence, the sticky nature of the soil—'tenacious' was the word I used at the time. As for the depth at which their bulbs are found that would easily be accounted for by the annual top dressing of decayed vegetable matter, as the meadow plants die and are pressed down by the weight of snow, which has a conserving effect; and sometimes by the addition of gravel from the splintering cliffs above.

But despite the layer of black humus above, and the clay below the ground, though soaking wet, was quite well drained, partly owing to its steep slope, and partly owing to its gravelly nature, for it was full of big stones and sand. The slope, of course, faced south, otherwise it would have been covered with scrub Rhododendron and other woody plants. This red Nomocharis was not at all common here, but subsequently I found a few plants higher up the valley, always scattered on steep gravel slopes below cliffs, and rare; the only rarer species was N. nana, of which I found about a dozen plants on a cliff. N. pardanthina, however, was abundant. *F. Kingdon Ward.*

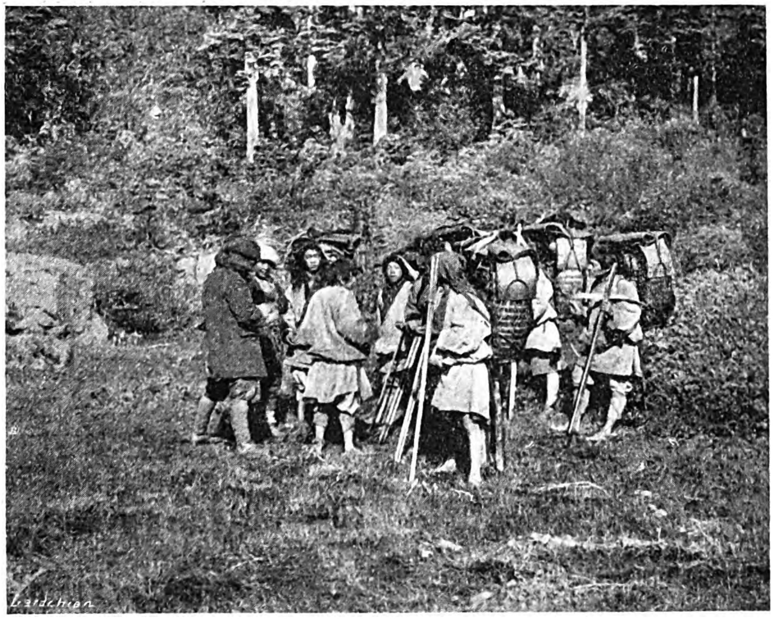

FIG. 66.—TIBETAN COOLIES ARGUING.

CERATOSTIGMA PLUMBAGINOIDES AS A BASKET SUBJECT.

THE beautiful, blue-flowered Ceratostigma plumbaginoides or Plumbago Larpentae, as it was once named, is familiar to many English gardeners as a suitable plant for the embellishment of the rock garden during the late summer, when it is rendered attractive by reason of its prettily coloured foliage in addition to the beauty of its flowers. In certain favoured localities it is quite hardy, while in other districts it is necessary to give it the protection of a cold greenhouse during the winter months.

Here, in New York, I find it grown as a basket plant with splendid effect, and as I have not seen it treated in this manner in the old country, I thought it worthy of note.

The baskets in question are eighteen inches in diameter, and have been filled with plants propagated early in the present year. At the time of writing (last week in July) they are well furnished with trailing growths, from two to two-and-a-half feet in length, towards the ends of which the clusters of flower buds are rapidly developing, giving promise of a splendid display of rich blue blossoms a little later. The baskets are suspended from the roof of a greenhouse, and when it is remembered that the outside shade temperature on some days has been so high as 92°. it will be readily understood that the conditions under which this Ceratostigma is growing are somewhat tropical.

I may state that large numbers of this plant are grown in pots throughout the summer for the purpose of filling formal flower beds wherein they are planted immediately they commence to bloom. *T. H. Everett, New York.*

PUBLIC PARKS AND GARDENS.

PENTSTEMONS IN LONDON.

IN the Victoria Tower Gardens, which stretch along the Thames Embankment, from the southern end of the Houses of Parliament, there is an exceptionally fine show of Pentstemons. An ample border, approaching a hundred yards in length and averaging nine feet in breadth, is filled with a large collection of the best varieties. These plants are very well grown and, as special care has evidently been taken in the colour arrangement, the border is particularly attractive.

Great interest is added by the neat stand which contains "A Short History of the Pentstemon" (see p. 122). From this the gardener, who desires to know the origin of the Pentstemon, may learn that while there are sixty species in cultivation, the handsome sorts now to be seen were obtained from P. Cobaea and P. gentianoides, two pale-purplish-coloured species from America. The latter, which is represented by a goodly batch of plants, is, in itself, a valuable garden plant and not surpassed in grace by any of the newer sorts. This account of the Pentstemon also states that we owe the Pentstemon as a garden plant to John Mitchell, an English physician who lived in Virginia in 1741.

As already stated, P. gentianoides is one of the most graceful of the Pentstemons, and it is the tallest of those to be seen in this noteworthy border. Its flowers are also the equal of the others in size; they are of pale purple, or lilac shade, with a pale throat. For general garden effect the varieties which have a definite white throat are the most desirable, for they are usually of more graceful habit, and the contrast of the white throat and surrounding colour is very effective. But the type which produces sturdier spikes of flowers that have the throats either stained or rayed with colour have a distinct value in the garden where colour mass is required, as well as in contrast to the others.

A good selection of the many varieties grown at the Victoria Tower Gardens includes Mrs. Matthew, bright pink with white throat; Mrs. Allsop, dull crimson; Fair to See, bright red with rays of carmine; Mauve Queen, mauve with white throat; Rosy Morn, rich rose with rayed throat; and Mauve Beauty, purplish-mauve with white throat; while, rather later to flower, there are Aldenham Pride, of deep colouring; Warthill, deep red; and Alex. Lafont. Each variety has a clear, but inconspicuous, label, and a neat edging of a red form of Begonia semperflorens makes a suitable margin to the excellent Pentstemons. *A. O. B.*

NOTICE OF BOOKS.

A New Dictionary of Gardening.

THE compiler of this small volume* expresses the belief that it "will fill a vacant space in gardening literature." Earlier in the preface he suggests that the book is intended for the edification of amateurs and jobbing gardeners, its object being to provide "a complete and effective guide to garden plants of every description." Greatly daring, the compiler has attempted this within the limits of an octavo volume of 155 pages, including lists of plants for various purposes and seasons and with few apparent qualifications.

A few quotations, taken at random, will serve to show the style and the measure of success that has been attained. "Laurel—*See* Aucuba, Kalmia." "Jasminum (Jasmine)—Ord. Oleaceae. Hardy, greenhouse and stove shrubs. Like a good ordinary soil. Propagation by layering or by cuttings. The flowers are yellow or white. Some of the kinds are small, not growing higher than three or four feet. The more usual height varies between ten and twenty feet." "Pelargonium (Stork's Bill) Ord. Geraniaceae. Greenhouse and hardy perennials. Soil loam and leaf mould with a little sand preferable. Propagated by cuttings, which may be taken during the whole of the Spring and Summer, in sandy soil in boxes and pots. Increased by seed, buds, and also by cuttings of the roots, though these methods are less usually employed than the first. Colours various. Height six inches to three feet. Flowering period, April to July. There are several sections, including the variegated-leaved and the Ivy-leaved, as well as the Zonal."

There are numerous little pen-and-ink sketches concerning which the compiler wisely states on page nine: "The illustrations in the text refer to the plants whose names appear in capitals ABOVE the illustrations," for we failed to recognise quite a goodly proportion. However, the half-tone illustrations are good, but, and the inevitable "but" intrudes itself, these were supplied by, with one exception, only two firms "that readers may deal with . . . knowing they will receive value for their money." We have nothing but respect for the two firms in question but this savours too much like an advertisement.

As a dictionary of gardening this newcomer has the merit of being cheap and the publishers have done their part as well as could be expected, but we wish the material had been more worthy of their attention.

Gardening in Wales.

MOST readers of *The Gardeners' Chronicle* are well acquainted with the interesting notes that are periodically written by Mr. A. T. Johnson on uncommon plants growing in North Wales. In amplification, as it were, he has filled quite a considerable book with pleasantly-written discussions on all manner of plants, and in the problems and pleasures connected therewith.

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* *A New Dictionary of Gardening.* By J. W. Morton. Published by W. Foulsham and Co., Ltd., London. Price 2/- net.

*A Garden in Wales** is essentially a book for the real lovers of gardens and gardening—the two are not necessarily synonymous—those who love to know of others' experiences with plants of their acquaintance, and of the plants they do not know; their garden trials, troubles and tribulations; their successes and failures. Mr. A. T. Johnson writes in a agreeable, conversational manner, and serves up frequent cultural hints in very attractive form. There does not seem to have been any set method with the book, which is made up of chapters with such titles as "Some Dwarf Woodland Plants, Mainly Ericaceous," "On Certain Early-flowering Shrubs," "Another Mixed Bag." and "On a Southern Slope."

In his preface, Mr. Johnson commences with the following rather surprising statement: "To most people a garden in Wales will doubtless be visualised as one with a climate of the kindliest geniality, one that is watered by heaven's warmest and gentlest rains and sheltered from the biting winds of the east by the bulwarks of the hills. Comparatively, that may be true enough; actually it is a mirage." Now, I dare to say, to most of us Wales conjures up visions of a mountainous country with rushing streams and swept by fierce gales. So that to gardens in Wales the newcomer would probably expect to have to battle against adverse conditions and make his garden in what sheltered nooks he could find.

But, as so often happens, there is a considerable gap between these two impressions of the principality. Wales has rugged mountains and it is these very mountains that make the favoured valleys where, as Mr. Johnson has shown so delightfully, a great variety of uncommon shrubs and plants may be grown to the great joy of the possessor and the admiration and envy of the visitor. The letterpress is good. and there are about a score of very attractive half-tone illustrations. *A. C. B.*

REMARKS DN THE CONDITION OF THE FRUIT CROP.

(See Tables and Summaries, Ante. pp. 131-137)

SCOTLAND, N.

Sutherlandshire.—Fruit generally is very scarce this year all over the north of Scotland. At Dunrobin there was a great show of blossom on all fruit trees, but late frosts and snow destroyed the flowers. Of Gooseberries and Black Currants we have none; Raspberries, only a very moderate crop, but Loganberries promise an abundant yield. Cherries were a super crop. Late Strawberry Alton Pine, promised fair, but all varieties of Plums, Apples and Pears are very scarce. The soil is of a light, sandy nature, with a subsoil of pure sand. *W. F. Game, Dunrobin Castle Gardens, Golspie.*

SCOTLAND, S.E.

Roxburghshire.—The soil in this district is very light and of a gravelly nature. We have experienced a good deal of rain and very severe frosts; 18° of frost were registered on May 10, just when the blossoms of Cherries and Plums were fully expanded. On the whole, it has been a very backward season for fruit, and crops are nearly five weeks late. *Alexander Black, Ancrum House Gardens, Ancrum.*

SCOTLAND, E.

Aberdeenshire.—Outdoor fruit crops are a failure owing to late frosts and the cold, wet spring and summer weather. *Simon Campbell, Fyvie Castle Gardens.*

——The fruit crops in this part of Scotland are, generally, disappointing. Early in the season all fruits promised to yield a good average quantity. In April we had frost which, so far as records here are available, were unprecedented in severity, and they were followed by unusually low temperatures, with cold, biting winds. As a consequence of the untoward weather, with the exception of Strawberries, fruits of all kinds will be much below the average, both in regard to quantity and quality. *John McKinnon, Haddo House Gardens, Aberdeen.*

——The fruit crops, generally, are a failure, especially Apples and Currants. Strawberries were a fair crop, but very late and small. It is the most disastrous year for fruits in my fifty years' experience. *James Grant, Rothienorman Gardens.*

Banffshire.—The fruit blossom in this district was spoiled by frosts and cold winds from April 24 till May 1. We registered from 1° to 12° of frost, and again on May 23, 4°. Previous to this period trees and bushes were looking very well. *George Edwards, Ballindalloch Castle Gardens.*

Forfarshire.—Fruit crops have turned out much better than was anticipated. Apples, Plums and Cherries were badly nipped by the late frosts, but Black and Red Currants came through remarkably well. Gooseberries carried as heavy a crop as we have ever had; Strawberries were good, although late. *J. B. Peffers, Panmure Gardens, Carnoustie.*

——The fruit crops are very much better than was expected after the severe frosts on April 29 and later. Previous to that date there was promise of the heaviest crop of fruit for several years. A considerable amount of damage was done to the Apple crop, which is practically a failure. Pear, Plum and Damson trees were laden with blossom, but these crops are only fair. Gooseberries, Black and Red Currants and Cherries cropped exceptionally well. Raspberries in sheltered gardens have cropped exceedingly well, but the foliage and young shoots of those under field cultivation were badly damaged by the frost. Strawberries were of good size but tasteless. Fruit, on the whole, is very late in ripening owing to an excess of rain and dull weather during May and June. *Gavin Brown, Craigo Gardens, by Montrose.*

Kincardineshire.—Owing to the long spell of dull, cold weather, all fruits are late. Strawberries look very promising, although the fruit may not be of good quality. In this district everything is about three weeks later than usual. *William Thomson, Ury House Gardens, Stonehaven.*

Midlothian.—The fruit trees looked well in the early part of the season, but frosts completely ruined the blossoms. *W. Crighton, Morton Hall Gardens, Liberton.*

Perthshire.—The late frosts and cold winds spoiled most of the fruit crops in this district, the chief sufferers being Apples, Pears and Plums. Black and Red Currants suffered least. Our soil is of a heavy nature. *James Tunstall, Keir Gardens, Dunblane.*

——Up to April 27, the prospects of a heavy fruit crop were favourable, but hard frosts from then until the 30th severely damaged most fruits, especially Peaches, Pears and Apricots. These were well set and swelling freely, but dropped off later. Some varieties of Apples and Plums are bearing freely, while others are fruitless. Small fruits are a good average crop. Peaches are more affected by leaf-curl than usual, while the later Apple blossom never opened fully. *James McGregor, Rossie Priory Gardens, Inchture.*

SCOTLAND, W.

Argyleshire.—Fruit crops are very bad in this district owing chiefly to the severity of the weather in April and May. Bullfinches destroyed the buds on Plums, Currants, Gooseberries and Apples. Strawberries are losing vigour. Formerly they grew well, but runners from young stock are very weak. *D. S. Melville, Poltalloch Gardens, Kilmartin.*

Ayrshire.—This has been a disappointing fruit season. Everything promised well until April 28 and May 1, when 10° of frost were registered which made Plums and Pears fall from the trees. Apples were scarcely in flower, but later on they dropped their fruits, James Grieve, Worcester Pearmain and Allington Pippin being almost the only varieties with a few fruits. Peaches and Nectarines are much better as their fruits set before the dates mentioned and had four-ply netting to protect them. *D. Buchanan, Bargany Gardens, Dailly.*

——There was an abundant show of fruit blossom, but between 4° and 5° of frost at the end of April did great damage, and later cold winds about the middle of May resulted in Apples setting sparsely. The fairly heavy crops of last year may also have something to do with the light crop of 1927, but even trees that carried only a moderate crop last season are as bad, if not worse, than those which did well the previous season. Small fruits, with the exception of Strawberries, are very heavy crops, but they are later than usual in ripening, owing to the sunless, wet weather experienced during the latter half of June and continuing into July. *A. T. Harrison, Culzean Gardens, Maybole.*

Buteshire.—Owing to the severe frosts in the last week of April and beginning of May, most fruits in this district are very scarce and late. Up to the time of writing the weather has been very wet and cold, consequently most fruits are quite a month late. Strawberries were very backward, and other fruits, such as early Gooseberries, show no sign of ripening. Our soil is heavy clay loam overlying marl rock. *J. Davidson, Ardencraig, Rothesay.*

Dumfriesshire.—The fruit crops this year are the poorest on record owing to the late frosts. Everything pointed to a good crop until the advent of frost. Our soil is a sandy loam. *James McDonald, Dryfeholm Gardens, Lockerbie.*

Stirlingshire.—Apples when in bloom gave promise of a fine yield which, however, failed to materialise; the spell of wet weather which occurred at a critical time had much to do with the poor resulting crops. Plums, while in bloom, experienced 11°, 12° and 13° of frost on successive nights and, as was to be expected, the crop is almost a failure. The small fruit crops are the heaviest seen here for some years. Strawberries had a fine show of bloom, and the earlier varieties have developed well during a short spell of sunshine. At the time of writing some of the later varieties are still in bloom. *J. D. Cunningham, Duntreath Castle Gardens, Blanefield.*

ENGLAND, N.E.

Durham.—Taking into consideration the bad weather of summer and the severe mid-June frosts, it is rather a surprise that there is much fruit at all. Some varieties of Apples, such as Lord Grosvenor, Worcester Pearmain, Warner's King, Cellini, Stirling Castle and Ribston Pippin, have better crops than for some seasons past, and others are bare. Cherries are exceptionally good. Of the bush fruits, Currants and Gooseberries are heavily laden. Raspberries are good, but Strawberries are a failure. Plums are better than usual, but Pears, both on trained trees on walls and also on bushes are a miserable crop. *J. A. Woods, Beamish Park Gardens, Beamish, S.O.*

Northumberland.—All fruit trees promised good crops in early spring. Apricots set well but late frosts did much damage. Plums and Black Currants were cut down by the frost. Cherry trees have good crops, a few early flowers only being frozen. Apples and Pears set freely, but owing to weeks of dry weather and cold nights, the crop was reduced by half. Strawberries escaped the frost. Gooseberries set well but were blown off the trees during the last fortnight of June. Our trees have been very free from caterpillars; I destroyed the latter with Morteg, which has proved very satisfactory. The soil is a light loam of great depth, and rests on a bed of freestone. *William McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.*

(*To be continued*).

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* *A Garden in Wales*, by A. T. Johnson. Published by Messrs. Edward Arnold and Co. Price 16/- net.

FROST INJURY TO APPLES.

Among the different causes of disfigurement of Apples, before picking, it is probable that frost is by far the rarest, at least in so far as the south of England is concerned. It is, therefore, of interest in a year such as the present, when late spring frosts wrought considerable damage, to put on record the nature of the injury attributed to it.

The following figures, kindly supplied by Captain A. H. Bird, Observer at Wye under the Ministry's Agricultural Meteorological Scheme constitute a complete record of every occasion during the months of April and May, 1927, on which the temperature at Wye (Kent) fell below freezing point (32°F.).

1927. Night of		Grass Minimum Thermometer. °F.
April	1– 2	26
	3– 4	28
	7– 8	30
	9–10	31
	11–12	30
	16–17	29
	17–18	30
	26–27	21
	27–28	26
	30– 1 May	21
May	11–12	25
	13–14	29
	22–23	30
	27–28	29
	28–29	29

It will be noticed that on the night of April 26-27 there was a hard frost, and that this was followed four nights later by another of equal severity. At this time (April 27) Bramley's Seedling Apple trees were in the early "pink bud" stage of blossoming, and the petals had not unfolded.

Some days after the two severe frosts had occurred it became evident that quantities of blossom had been damaged. In the case of earlier varieties with blossoms wide open, it is probable that great havoc was done, one plantation of Beauty of Bath, with a phenomenal amount of blossom—to the writer's own knowledge—being subsequently entirely without fruit. Varieties such as Bramley's Seedling, with the blossom not so far advanced, did not escape, and even in those blossom buds which were green, *i.e.*, with the petals still folded and covered by the calyx, the receptacle was found to have been turned brown in the centre. Before May was ended, therefore, it was not surprising that growers held a somewhat pessimistic view regarding the present year's Apple crop. It is probable that the greatest damage occurred in low-lying situations or in those which were much exposed. Orchards and plantations on higher ground or those which were well sheltered escaped injury.

An almost immediate effect of the frost was seen on the foliage of several varieties. Many leaves became puckered and blistered, the whole thickness of the lamina, with the exception of the lower epidermis, being raised here and there. The lower epidermis was unable to cover the bases of all the blisters on a leaf, and in many cases had become torn or had turned brown under the puckered places, giving the lower surface of the leaf a brown-green, mottled appearance in addition to the crinkling. The affected leaves were amongst the earliest formed, and they did not sustain sufficient injury to cause them to fall. Figure 68 shows two frost-affected leaves of Cox's Orange Pippin, which were photographed on July 8.

As regards the fruits, it was soon found that the damage done was considerably less than had been thought, and that a fair crop of Apples was setting. From early June onwards, it was noticed that Apples of several varieties, growing in various situations, were marked around the "eye" with a greyish-brown ring of dry skin, and in certain cases there were shallow cracks present in the affected zone. The injury was not deep and the layers of brown cells, if scraped with the finger nail, were easily removed, revealing the normal green colour of the Apple skin beneath. This damage was conspicuous and will possibly reduce the market value of the fruit. In the majority of cases seen, the quantity of fruits affected on any one tree has been small, but a whole plantation of Bramley's Seedling is known to the writer in which practically every Apple on all the trees is thus marked. The damaged fruits are at present hanging well, and there is every indication that they will reach maturity. Fig. 67 shows the injury to Bramley's Seedling Apples gathered from the plantation mentioned.

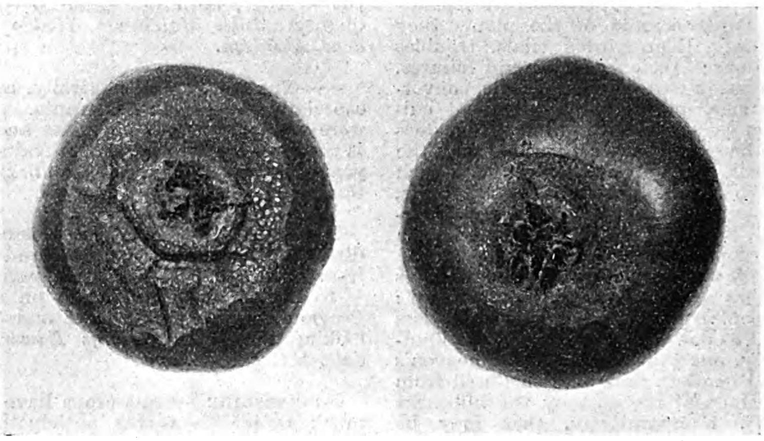

FIG. 67.—FROST INJURY TO APPLES.
Bramley's Seedling; natural size; photographed July 8, 1927.

Similarly marked Apples have been received from Swanley, East Malling, Patrixbourne, near Canterbury, and Linton, near Maidstone, in addition to those which are common at Wye. It is known that besides Bramley's Seedling, Stirling Castle is another variety which suffered injury to the fruit.

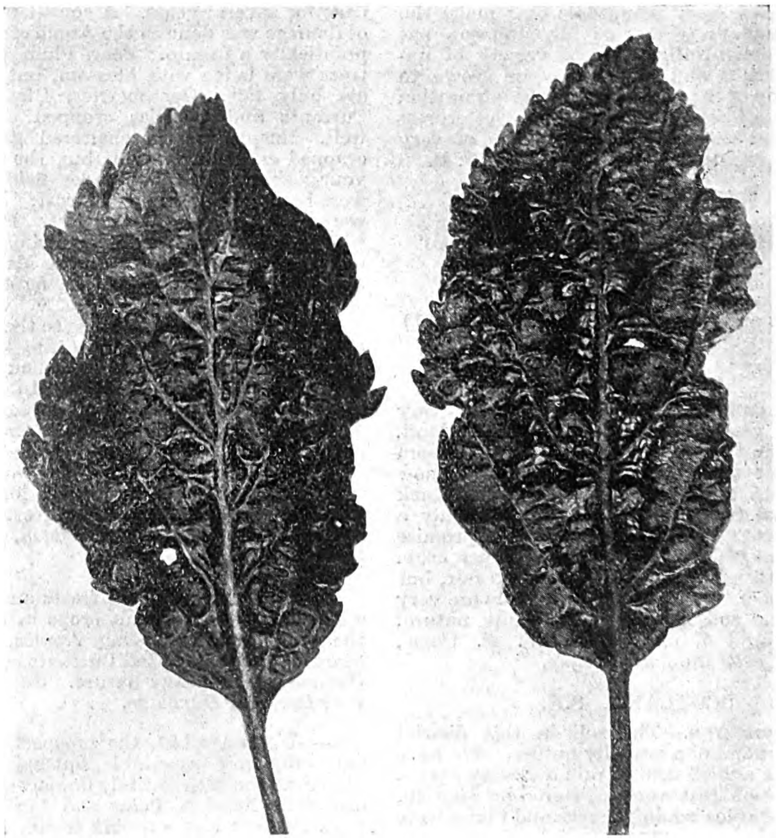

FIG. 68.—FROST INJURY TO APPLES.
Blistered leaves of Cox's Orange Pippin, photographed July 8, 1927.

There seems no reason to doubt that frost was the cause of the damage, since this type of injury cannot be attributed to animal or fungous agency; further, it has occurred plentifully on trees which have never been sprayed and on trees the blossom of which is definitely known to have been damaged by frost. Externally disfigured Apples have quite possibly been derived from some of the more tightly-closed flower buds in the case of a variety such as Bramley's Seedling. These might have suffered no internal injury but might have been slightly frozen on the exterior immediately below the lobes of the calyx.

Several forms of injury to Apples, including that under consideration, are figured by P. J. Fryer.[*] Frost damage to the fruit has also been described by U. P. Hedrick[†] in the United States.

As regards the frost-blistered foliage, this has been described by Paul Sorauer[‡] in Germany and by F. C. Stewart and H. J. Eustace[§] in the United States. In England the phenomenon fortunately appears to be rare. *W. M. Ware, South-Eastern Agricultural College, Wye, Kent.*

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[*] Fryer, P. J., *Successful Spraying and how to Achieve it*, p. 28, Fig. 7. London, 1923.

[†] Hedrick, U. P., *New York Agric. Exper. Sta. Bull.* 287, p. 187, March, 1907.

[‡] Sorauer, P., Frostblasen an Blattern. *Zeit für Pflanzenkrankheiten* 12, p. 44, 1902; and *Handbuch der Pflanzenkrankheiten*, Band 1., p. 568, Berlin, 1921.

[§] Stewart, F. C., and Eustace, H. J., *New York Agric. Exper. Sta. Bull.* 220, p. 218, Dec., 1902.

MARKET FRUIT GARDEN.

The present season, so far as my place is concerned, promises to be satisfactory, though, so far, it has been very difficult. The satisfaction comes from bountiful crops of Black Currants, Apples, and two varieties of Plums; the difficulty has been caused by the weather, which has hindered cultivation and frequently interrupted picking. I am generally able to pride myself on the cleanliness of my cultivated plantations, but this year they are disgracefully weedy. A wet March prevented an early start with cultivation. During most of the time when the land was fairly dry in April horses and men were fully occupied with spraying, so little cultivation was accomplished. Then came the May drought, which hardened the surface so that implements could make little impression. The return to rainy weather in June and July produced a big crop of weeds and poor conditions for dealing with them. From now onwards the horses will be almost continually employed in carting Apples from the plantations to the packing house and again to the station; so it is to be feared that the land will have to remain weedy, unless a team can be hired.

As for picking, I never remember such a difficult time during the Black Currant harvest. On account of rain and dewy mornings, scarcely a full day's work was accomplished; and matters have not been much better during the picking of Rivers' Early Prolific Plums. Turning to the more cheerful side of the picture, there is ample compensation to be found in the excellence of certain crops. Black Currants, to my surprise, yielded more than double as much as they did last year—the best crop I have had for a long time. Rivers' Early Prolific Plums produced nearly three times the amount of last season's crop, a number of trees having to be propped up to support the weight. Czar, unfortunately, was not propped, and a good many branches have broken under the load of fruit. Other varieties of Plums will give so light a crop as to be scarcely worth mention. A mere sprinkling of Victoria, Pond's Seedling and President is all that the spring frosts have left. The brightest feature, however, is the Apple crop, which, for quantity and quality combined, is the best I have had since 1922. As the crop throughout the country is decidedly patchy, there should be a fair prospect of marketing the fruit to advantage.

Black Currants.

Black Currants have apparently been planted too extensively in recent years. It seems impossible otherwise to account for the very low prices realised for this season's crop. Taking the country as a whole, the yield was certainly not more than moderate. East Norfolk, the chief Black Currant area, was even less fortunate. Yet the price fell to 4d. per lb. in Covent Garden. Only those growers who made forward contracts secured a satisfactory return. I refused a late contract at 6d. per lb.; but it would have paid me to accept it for several tons of mid-season fruit. If I had not been lucky enough to obtain a heavy yield, the result would have been very poor. The question is: What will happen in a season when there is a really good crop throughout the country? Apparently it will depend a good deal on continental supplies. This year imports from France were exceptionally heavy; and the quality of the fruit was so good that many jam-makers bought it in preference to home-grown. The outlook is not encouraging. I doubt if we can afford to grow Black Currants to sell at less than 6d. per lb., for they are an expensive crop. Generous manuring is essential, and bud-mite, aphis and reversion are costly to control. Certainly there will be no profit made from plantations which are not in thoroughly healthy and productive condition. Those which are worn out, or which contain many reverted bushes, should be grubbed; and it may be that by doing this growers will ease the situation to some extent.

Mine being an early district, it will probably pay me best to grow Boskoop Giant and to place the crop on the market in the ordinary way. I obtained 11d. per lb. for some fruit of this variety. Baldwin was weighted down and black with fruit, but, as the bushes are young and small, they did not yield so heavily per acre as Seabrook's Black. I doubt if Baldwin will answer with me, as it will not hang late enough in my early district to escape the low, mid-season prices, and it is not vigorous enough for my soil. Owing to the heavy crop and the drought, it has made scarcely any growth this year, whilst other varieties have done very well in this respect. Bushes of several varieties planted last winter looked rather sickly during the drought, but have since made such good progress that they will be large enough to carry a substantial crop next year.

A Clean Apple Crop.

My worst enemy, Apple scab, is giving me hardly any trouble this season. There is ample evidence that spraying was worth while; but there is no doubt that the dry weather of May also played an important part in holding the disease in check. I was afraid that the frequent rains experienced since then would result in a serious spread of scab, but, as my past records show, it is the weather of May which has most to do with the amount of trouble from this disease. Conditions before and after are relatively unimportant. That it is most unwise, however, to trust to the controlling influence of drought is shown by unsprayed trees on my place and by reports from other districts, where scab has severely attacked the fruit on trees not protected by fungicides. The least satisfactory control with me is in the case of Beauty of Bath; but even this variety carries a much higher percentage of clean fruits than it has done for several years.

Some months ago, a correspondent to this journal recorded his experience that trees growing in positions where they are shaded during part of the day are much freer from scab than trees in fully exposed positions. It has been easy for me to put this matter to the test, as control rows, purposely left unsprayed, in one plantation, are protected from the morning sun at one end by a high shelter belt. Careful examination does not afford any confirmation of the theory. There is some variation in the amount of scab on different trees in the rows, but it has no reference to their position with regard to shade. It is more likely due to variation in stock, as the trees are on seedling stocks. The shaded trees are neither better nor worse than the fully exposed ones with respect to scab.

Trouble with Loganberries.

Loganberries are apparently liable to suffer from a disease somewhat similar in its characteristics to reversion in Black Currants. A relative and near neighbour planted some Loganberries in the winter of 1925, and they carried their first crop this summer. He finds that a considerable proportion of the stools is worthless, the leaves being small and narrow and the fruits imperfect. The cause of the trouble has not yet been definitely traced.

Thinning Apples.

The thinning of some of my latest varieties of Apples has not yet been finished. The weather interrupted and prolonged the picking of soft fruits to such an extent that there was no interval between this and the picking of early Plums during which the women could attend to thinning. Most of the work has been done by men working overtime—a rather too expensive method. Early varieties were, for the most part, dealt with in good time, although the start was postponed owing to the rather heavy natural dropping of fruit, which seemed likely to thin the crop sufficiently. The value of early thinning is now strikingly apparent. Lord Grosvenor and Early Victoria, for example, have responded wonderfully, the fruit being large and even in size. There can be no doubt whatever that thinning is a sound commercial proposition in these days when the public demand high-grade fruit. Cooking Apples of small size are almost worthless. *Market Grower.*

FRUIT REGISTER.

APPLE COE'S GOLDEN DROP.

It is a matter for considerable surprise that this really excellent Apple is not more freely planted. Within my knowledge, a fine crop of clean fruits was invariably gathered from a standard tree and always claimed a full measure of appreciation. In season from November to May, the fruits are small to medium in size, conical, very even and regular; the skin yellow, flushed crimson on the cheek facing the sun, with a few irregular, crimson spots, and flushed with thin patches of delicate russet. The flesh is greenish-yellow, firm, very juicy and sugary; the tree is hardy and a regular cropper.

Mr. Gervase Coe, of Bury St. Edmunds, who raised the Golden Drop Plum, was also responsible for the introduction of this useful dessert Apple. Whether he raised it is a matter of some doubt, as Dr. Hogg states that the variety was probably known in Essex orchards for many years prior to its introduction, although it was sent out by Coe as a seedling. Coe's Golden Drop is also an excellent Apple on the Paradise stock, either as a dwarf bush or espalier. *Ralph E. Arnold.*

APPLE COURT PENDU PLAT.

This very old Apple is one of the most consistent cropping varieties, but, as stated in your remarks on the fruit crops (p. 121), it has failed entirely in many districts this season. A tree in my garden has cropped consistently over a long number of years, but it has only one or two fruits this season. It is one of the latest of all Apples to flower, and in the majority of years it escapes injury to its blossoms, for which reason it has long been known as the "Wise Apple." Other synonyms are Garnons and Wollaton Pippin. This variety is grown extensively on the continent, and Hogg, in the *Fruit Manual*, gives a whole list of names in French and German.

The fruits are of very characteristic shape, so that the variety is easily determined. They are oblate, of regular outline, and flattish at the top and bottom, something after the manner of Fearn's Pippin. The flavour is good, but the flesh is very hard, and on that account is not popular with some. When, however, at their best, the fruits are very crisp, juicy and finely flavoured. In sunny summers the skin develops a rich red tinge on the exposed side. The variety is well worth cultivating, as it is one of the most dependable of all Apples in cropping. *T.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

R.H.S. Awards.—The criticism by so faithful a servant of horticulture as Mr. Charles E. Pearson, in your issue of August 6, will naturally command attention. If Mr. Pearson will be good enough to look on page 67 of the R.H.S. *Notices and Arrangements* for the year 1927, he will see the objects of the Committees set out; these include awards to "objects of great excellence which have been hitherto overlooked or ignored"; accordingly, Floral Committee B were acting up to their instructions in making the awards to which Mr. Pearson takes exception. It remains to consider these awards on their merits, and in this connection it may be pointed out that whilst shrubs from South America, Australia and New Zealand are often tender while young, they become reasonably hardy when they have made plenty of wood and attained the proportions of a bush. Carmichaelia australis, as generally seen, is a rather weedy shrub and not very attractive As shown by Mr. Gerald Loder it was a charming plant; owing to the wet weather it had developed a number of small leaves, and these set off the innumerable white and purple flowers, giving the general impression of a very beautiful Heath. Feijoa Sellowiana flowers well on walls in many parts of England, including Kew, when the wood is mature. It is very beautiful in flower but rarely or never fruits in this country. Major Stern has recently planted the Feijoa in his chalk pit, and I have followed his example and put a plant on the open down at the foot of Boxhill. It survived the frosts of 1925-6, and though early this spring it had its head blown off, it is growing very well. Lomatia ferruginea has been flowering freely this year throughout the country and has revealed an unsuspected charm, having been grown up to now mainly for its foliage. It succeeds well in the open at Headley without the support of a wall, and Mr. H. Comber has recently brought back from the Andes seeds collected at a high altitude. Mitraria coccinea is a charming plant which does best in peaty soil on a north wall. We grow the tropical Hymenocallis speciosa bulb in complete shade under the staging in the stove, but it will also grow in a temperate house. It increases rapidly by offsets and is no trouble whatever, producing magnificent leaves throughout the year and immense umbels, two feet across, of white flowers, on stalks three feet high. Each bulb flowers regularly in July or August and scents the air with the heavy fragrance of Vanilla. For some reason or other, this bulb figures at a high price in catalogues, but there seems to be no justification for this as it is very easy of increase. We owe a debt of gratitude to Mr. Hay for reintroducing the beautiful annual Sabbatia campestris, indeed, it is difficult sufficiently to appreciate the work Mr. Hay has done and is doing in recovering fine plants that have gone out of cultivation; for example, certain Arctotis and other Compositae, Lathyrus nervosus, Berberis Nevinii, and the blue perennial Triptilion. Five of the six plants mentioned above may be obtained without much difficulty in this country and would well repay any Fellow who might acquire them. They were originally introduced to this country by old collectors who were able to pick and choose their plants and did not have to go through a flora with a tooth-comb, which nowadays results in a crop of dingy Primroses, weedy Calceolarias and minute Rhododendrons! Finally, further justification for the awards made to these plants is found in the fact that within the last ten years four of them have been considered sufficiently worthy to have their pictures in *The Gardeners' Chronicle*. *William Lawrence, Burford.*

Strawberries.—I think the majority of gardeners find Strawberries a difficult crop to grow. One hears much about failures by private gardeners, but these are not the only places where there is trouble. I have seen acres of Strawberry plants ploughed in (and other crops planted) by market growers. Those who have trouble with British-raised varieties might do worse than try the Dutch and German sorts. I know gardeners who have tried them and secured good crops, and if the fruits are not quite up to those of British Queen flavour, it is better to obtain a good, healthy crop than the miserable specimens one sees so often everywhere. I planted The Duke, and two years afterwards grubbed the lot out, then planted two other new introductions which were also grubbed up. Royal Sovereign, from new stock, bought in pots, was a failure. Kentish Favourite did well, but Leader was the worst of the lot with me. Madame Kooi (a monstrosity) stood up as green as grass when the other varieties were dead or dying. What is the reason of it all? It cannot be that cultivation is at fault, as Strawberries fail under the best of conditions. Sometimes one sees a healthy lot. I saw such a batch grown under market conditions planted with dibbers, and cropping well, while less than a mile away young beds were being ploughed in, although the ground had been well prepared. Would it not be advantageous if our Strawberry raisers used some of the foreign-raised sorts as parents to impart new vigour into their stock? Perhaps they have done so. Strawberry growing is not a paying proposition now, so far as British-raised varieties are concerned. *G. Kent, Apps Court Nursery, Waltham.*

SOCIETIES.

SCOTTISH SWEET PEA, ROSE AND CARNATION.

Success again attended the annual show of this enterprising Society, which was held on Wednesday and Thursday of last week. The entries in the large classes of Sweet Peas were not so well filled as in former years, but the popularity of the single vase competition was reflected in the increased space required. Roses were particularly good, and the entries were the largest in the history of the Society, while the quality of the blooms was almost incredible considering the weather. The backward season did not affect either the quantity or quality of Carnations.

Sweet Peas.

In the open section, Messrs. Torrance and Hopkins staged the only collection, and they were second in the class for twenty-four vases, where Mr. John A. Grigor won first prize; he also excelled with a decorative vase of six novelties of 1927. The latter consisted of Model, What Joy, Royal Mauve, Del Monte, Red Gauntlet and Patience. Two Cumnock growers, Mr. James Blackwood and Mr. David Smith, were first and second prize winners in the class for twelve vases, the first-named showing Ivory Picture, Sybil Henshaw, Youth, Charming and Powerscourt.

Honours in the gardeners' section were widely distributed. Mrs. Claud Allan's Cup for six vases was awarded to Mr. J. B. Campbell, Newport, whose examples of Margaret, Peggy, Purple Perfection, Powerscourt, Constance Hinton and George Shawyer were superior, but their arrangement could have been improved. Mr. Robert Millar, Dumbarton, excelled for twelve vases; and Mr. John M. Urquhart, for nine vases. Mr. Edward Thomson, Larbet, was also successful.

The principal prize winners in the amateurs' section were Mr. James Paul, Killcarn; Mr. Walter Turner, Chryston; Mr. James Logan, Cumnock; Mr. James McIntosh, Aberdeen; and Mr. John M. Jeffrey, Selkirk.

The last-named exhibitor also excelled in the gardeners' and amateurs' sections, and he staged the best vase of the new cream sort, What Joy. Prize winners of single vase classes were Mr. J. Grigor (Royal Mauve and Miss Philadelphia); Mr. James Paul (Colorado and Olympia); and Mr. J. Loan, Coldstream, (Model). This vase of Mr. Bolton's new white Pea also secured the award for the best vase of any 1926-7 novelty, and was ultimately selected as the best vase of Sweet Peas in the show.

The chief award in the open class was the Burpee Cup, for which there were nine groups of twelve vases. Competition was keen, and Mr. James Paul defeated Mr. J. A. Grigor (second prize) and James Logan (third prize). His best vases were Magnet, Royal Sovereign, Charming, Venus, Hebe, Youth and George Shawyer. Mr. Grigor was compensated by his success in the class for eighteen vases, for which Mr. James Blackwood was the runner up, and he also won six prizes in the single vase competition.

Roses.

The feature in this section was the outstanding success of Messrs. D. and W. Croll, Dundee, who were placed first for six baskets, twelve vases, twelve blooms of varieties introduced since 1924, twelve blooms red, twelve blooms yellow, twelve blooms of any other colour, and twenty-four blooms, distinct varieties. Messrs. James Fairley and Co. and Messrs. Adam and Craigmile were also successful. Only Mabel Morse was shown in the yellow class and Mrs. Henry Bowles in the pink class, but the most admired exhibit in the show was Messrs. Croll's dozen blooms of Lady Inchiquin. In the class for six blooms of any seedling not in commerce, Messrs. Dobbie and Co. were placed first and second with Duchess of Atholl and Elizabeth of York, for which they also received a Gold Medal and Certificate of Merit, respectively.

Among the successful exhibitors in the Gardeners' and Amateurs' classes were Mr. Edward Penfold, Parton, Mr. James Kerr, Stewarton, Mr. Andrew Fox, Kilverning; Mr. J. G. Williamson, Whitecraigs, Mr. D. Murcheson, Kirn; and Mr. James Paterson, Lamington; the last-named won Lady Glenarthers Cup in the amateur class. The best Rose in the nurserymen's class was Mrs. Franklin Dennison, grown by Messrs. Paton and Sons, while in the gardeners' and amateurs' section, Mr. James Kerr provided the best bloom with an example of Mrs. Henry Bowles. Mr. James Paterson secured a similar honour in the amateur division.

Carnations.

Here a new successful record was created by Mr. Alexander McMillan, Cumnock, who staged eleven first prize exhibits, his prizes including the Irvine Valley Cup for six vases of Carnations and Picotees; the Carlaw Cup, open to gardeners and amateurs; and a Gold Medal for the best vase of Carnations shown by an amateur. In the remaining classes Messrs. James Smith, Darvel; Mr. Thomas Kilpatrick, Kilmarnock; Mr. John H. McDonald, Glasgow; Mr. R. W. Mair, Stewarton; and Mr. James Fullarton, Ayr, also excelled. All the first prizes for Perpetual-flowering Carnations were won by Mr. Arthur Ross, Kilmalcolm, and in each case Mr. A. T. Harrison, Culzean Castle, was the runner up.

Decorative.

The display in this department was extensive and of high merit. The Invertrossachs Cup for the best decorated dinner table was awarded to Miss Edna Dixon, Dumfries, whose arrangement consisted of Lamia Roses.

Mr. D. McNeil and Mr. W. Holmes, Helensburgh, staged the best bouquets, while Mr. James Blackwood, Mrs. Russell Mearns, Mr. E. Penfold, Mr. Arthur Ross and Miss Smillie were other prize winners.

Trade Exhibits.

Large Gold Medal.—To Messrs. Austin and McAslan, Glasgow (Roses); and Messrs. Dobbie and Co., Edinburgh (Roses and Sweet Peas).

Gold Medals.—To Messrs. Thyne and Son, Dundee (Roses and herbaceous flowers); Messrs. R. K. Gemmell and Co., Glasgow (Roses and Sweet Peas); and the Scottish Co-operative Wholesale Society, West Killside (Roses).

Silver Medals.—To Messrs. Lowe and Gibson, Crawley (Carnations); to Messrs. Leighton's, Glasgow (Sweet Peas); to Messrs. Ballantyne and Jackson, Hamilton (Sweet Peas and Roses); and to Messrs. Campbell and Son, High Blantyre (Carnations).

Sweet Pea Trial Awards.

Specimen vases of seedling Sweet Peas which have been under observation at Helmsburgh, were staged by the Society and the following awards were made:—

Gold Medal.—To *Mrs. A. Searles* (Messrs. Robert Bolton and Sons). This cerise variety showed a rogue at the Reading trials, but came true in the Scottish trials of the past two years.

Silver Medal.—To *Pinkie*, deep cream-pink (Messrs. C. Morse and Co., California); *St. Mungo*, deep cream pink (Mr. George Bowness, Busby); and *Charm*, deep cerise (Mr. J. Stevenson, Wimborne).

Certificate of Merit.—To *Glorious*, cerise; and *No.* 68, rose (Mr. J. Stevenson); *Hero*, cerise (Messrs. C. C. Morse and Co.), *Auld Reekie*, light cream-pink (Mr. Bowness); *Mountjoy*, cerise (Mr. W. E. Sands, Lisburn); *No.* 35, cream-pink (Messrs. R. Bolton and Sons); *No.* 86, blue (Messrs. Dobbie and Co.); *Victoria*, lavender (Mr. W. J. Bland, Victoria, B.C.); *Corona*, rose, and *The Admiral* (Messrs. Cullen and Sons, Witham); the last is a new shade in dark blue Sweet Peas, and the blooms are large and of good form.

ROYAL HORTICULTURAL.

August 16.—There was a rather better attendance at this fortnightly meeting of the Society at Vincent Square, Westminster, than on several recent occasions. Gladioli were the chief flowers, though Roses, Phloxes and general border flowers were freely shown. The Foremarke Cup for Gladioli induced good competition. The Floral Committee recommended three Awards of Merit and selected four other novelties for trial at Wisley. Orchids were few and apart from several small collections of bush fruits the Fruit and Vegetable Committee found little to engage its attention. The Joint Dahlia Committee met for the first time this season and selected seven new Dahlias for trial at Wisley.

Orchid Committee.

Present: Mr. C. J. Lucas (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. Frederick J. Hanbury, Mr. Arthur Dye, Mr. J. E. Shill, Mr. H. G. Alexander, Mr. Fred. K. Sander, Mr. Charles H. Curtis, Mr. A. McBean, Mr. T. Armstrong and Mr. Richard G. Thwaites.

Awards of Merit.

Cypripedium Hiraethlyn (*Godefroyae* × *Blanchette*).—A very charming hybrid with petals and dorsal sepal quite broad, white, with radiating, dotted markings of dark purple, while the white lip is "dusted" with dots of similar colour. Shown by Lady Aberconway and the Hon. H. D. McLaren (gr. Mr. Puddle), Bodnant.

Odontoglossum grande var. Oddity.—A very distinct and unusual form in which both the petals have taken on the formation of the labellum so that the flower appears to have three lips; there is but one column, but the winged base and crest of the lip is repeated in the petals. The sepals have darker brown markings than in most forms of O. grande, and the yellow ground colour in all the parts is paler than usual, the true lip being the only organ of quite similar colouring to the type. Shown by Messrs. Stuart Low and Co.

Groups.

Messrs. Sanders contributed a group of Orchids, and their exhibit contained a fine specimen of Oncidium Wentworthianum with a branching spike about eight feet long, carrying yellow and brown flowers; examples of Stanhopea oculata and S. insignis var. flava, the latter carrying eight flowers, with a second spike as yet unexpanded; Vanda coerulea, Oncidium pumilum, Bifrenaria tetragona—quite rare; and Odontoglossum grande and its variety Oddity, which is described above. Other interesting plants were Cypripedium niveum, C. A. de Laresse var. St. Alban C. Wiertzianum and C. Maudiae, together with Cattleya triumphans—one of the C. Rex hybrids—C. Hardyana and C. H. alba.

Messrs. Charlesworth and Co. showed the fine Laelio-Cattleya Pyramus var. Senator, with handsome, mauve-purple flowers; L.-C. Orebus, with golden sepals and petals; Odontioda Vivian, Odontoglossum Olivia var. Princess, O. Harryanum magnificum, O. St. Mungo, quaintly marked; Vuylstekeara rubra, Platyclinis filiformis, and the tiny Masdevallia simula.

Lady Aberconway and the Hon. H. D. McLaren (gr. Mr. Puddle), Bodnant, showed Cypripedium Hiraethlyn (Godefroyae × Blanchette), C. Glasllyn (Blanchette × niveum), and C. Penllyn (bellatulum × Blanchette). These were all new crosses and all very beautiful; we have placed them in the order in which they appealed to us. C. Hiraethlyn has broad, white segments dotted and dusted with dark purple; the lip is white, faintly dotted or dusted with purple, and has a small opening.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mrs. Ethel M. Wightman, Mr. H. J. Jones, Mr. William Howe, Mr. Donald Allan, Mr. D. Ingamells, Mr. W. H. Page, Mr. James B. Riding, Mr. W. B. Gingell, Mr. J. T. West, Mr. D. B. Crane, Mr. Courtney Page, Mr. G. W. Leak, Mr. A. Turner, Mr. Charles E. Pearson, and Mr. N. K. Gould, Secretary.

Section B.—Hon. Henry D. McLaren (in the chair), Mr. James Hudson, Mr. G. Reuthe, Mr. F. G. Preston, Mr. Mark Fenwick, Mr. Amos Perry, Mr. E. H. Wilding, Mr. G. Yeld, Mr. T. Hay, Mr. W. G. Baker and Mr. R. D. Trotter.

Awards of Merit.

Lobelia Shirley Crimson.—This is a very showy variety of the tall-growing L. cardinalis type. It is a vigorous grower producing large, purplish leaves and an erect raceme of large, bright crimson flowers. Shown by Messrs. B. Ladhams, Ltd.

Rhododendron prophantum.—Unfortunately, it seems that this vividly beautiful Rhododendron is not quite hardy. It was discovered by Forrest in Upper Burma in 1919, where it becomes a large tree. The large leaves are rough, dark green and covered on the upper surface with a loose, dark grey tomentum, while the undersides have a persistent pale cinnamon covering. The trusses are large and the semi-pendulous flowers have long, hairy stalks. The colour is a shining Morocco crimson. Shown by Lionel de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Southampton.

Watsonia Orange Beauty.—This is a vigorous variety of the well-known South African Liliaceous plant, bearing pale orange-coloured flowers. Shown by Lady Aberconway (gr. Mr. F. C. Puddle), Bodnant, N. Wales.

For Trial at Wisley.

Three very good, large-flowered Gladioli, raised by Messrs. Kelway and Son were selected for trial at Wisley. Langport Scarlet is of brilliant scarlet colour with a touch of crimson on the lower segments. Perfect Peace has a well-formed spike of large, white flowers with short, dull to carmine lines running to the base of the segments. Mr. Peel has pink flowers with carmine markings on the lower segments. Phlox Sweetheart, sent by Messrs. Rich and Cooling, bears a well-formed truss of large, pale pink flowers flushed with salmon, and has a paler centre.

Dahlias for Trial.

The following varieties were selected by the Joint Dahlia Committee for trial at Wisley.

Mrs. A. Sandeman.—A large, rose-mauve-coloured garden Cactus variety.

Mrs. Fred Warner.—A Cactus variety which has rolled florets of rose-pink colour lightly tipped with white. The centres of the flowers are milk-white.

R. H. Holton.—A very large, flattish Decorative variety of orange-scarlet colour.

Dulcet.—A Cactus Dahlia with rolled pink florets and a yellow centre.

Redpole.—A showy Cactus variety of velvety crimson colour.

Alfred Dyer.—A good, pure white Decorative variety. The above were shown by Messrs. J. Stredwick and Son.

Pink Perfection.—A pretty miniature Paeony of bright pink colour with a small carmine zone. Shown by Messrs. J. Cheal and Sons.

Groups.

Gladioli were extensively shown by many growers. Messrs. Kelway and Son filled a large space with a more than usually attractively arranged collection. In the centre they had a raised basket of the beautiful creamy Lady R. Portal, in association with Diplomacy, blush; Bleriot, bright salmon; J. L. Clucas, vivid scarlet, and the lovely Golden Measure. Amongst the many varieties shown in smaller quantity were the gorgeous Orby, of uncommon rose and velvety-crimson shades, and Princess Maud, of rich velvety-crimson colouring. In addition to the above-named large-flowered sorts there were many Primulinus hybrids.

In a large floor group, Messrs. Carter and Co. made a most attractive show of Gladioli. The centre was devoted to three large baskets of the clear purple Jacoba, with lower baskets of the dark velvety Baron Hulot. Other admirable sorts were Rose Precoce, of salmon colouring; Vesuvius, fiery red; White Giant; America, lilac blush; and Niagara, of creamy shading. Besides these large-flowered varieties there was a good selection of Primulinus hybrids.

On the staging, Messrs. R. H. Bath, Ltd., set up an interesting collection of Gladioli of both types. Chief amongst the Primulinus hybrids were goodly vases of Salmonea, Salmon Beauty, Alice Tiplady, L'Orillon and Xanthia. Messrs. D. Stewart and Son had vases of Frau Dr. Hauff, orange-crimson, and Dawn, salmon, of the large-flowered sorts, and Atalanta, Souvenir and Isis amongst the Primulinus hybrids. Messrs. Konijmenberg and Mark had a good collection of Gladioli. Messrs. R. and G. Cuthbert staged Glory, Orange Queen, Orange Brilliant, Vanessa, Margaretta and other Primulinus varieties with a background of Hydrangea paniculata grandiflora.

The Foremarke Cup, which is offered for a collection of twenty spikes of Gladioli, in not fewer than ten varieties, grown by the exhibitor, was won by Mr. A. E. Amos, Colchester, with an exceedingly good collection. His chief varieties were Leslie Henson, pink with a cream blotch Sunset, shades of salmon; and Professor Ribbins, scarlet, of the large-flowered type, and La Couronne, white, with crimson markings on the lower segments; and Desmond Amos, lilac shades, with carmine blotch. Messrs. D. Stewart and Son were second, and they included Libesfleur, Duchess of York, Pfitzer's Triumph, Herada and Sappho. Messrs. H. Langbridge and Co., the third prize winners, included spikes of Pride of Haarlem and Niagara in their exhibit.

On a goodly floor space, Mr. H. J. Jones set up an admirable collection of herbaceous Phlox, well set out in round baskets. His principal varieties were Evangeline, salmon; Dr. Koningshofer, glowing scarlet; F. A. Buckner, white; Europe, pale blush with carmine eye; Salmon Queen, and the splendid pink variety, Daily Sketch, which received an Award of Merit at the previous meeting. At one end of the Phloxes, Mr. Jones placed some baskets of decorative Dahlias.

Zinnias of exceptional size and of beautiful colours were staged by Messrs. Dobbie and Co. The many varieties included Crimson Monarch, Illuminator, beautiful old rose colour; Oriole, orange; Golden State, rich yellow; Dream, rosy mauve, and Purple Prince. An extensive collection of Echinacea purpurea was shown by Mr. Ernest Ballard. Mr. H. Hemsley had another selection of his dwarf Sidalceas, which included Mrs. J. B. Riding, double flowers of deep pink colour; Abol, clear pink; Mrs. R. Corfield, ruby red and some good unnamed seedlings.

In a large collection of miscellaneous border flowers, Messrs. B. Ladhams, Ltd., included hardy Crinums, Lavatera Olbia, Coreopsis, herbaceous Phlox, Sidalceas and Physostegia speciosa rosea. Mr. W. Wells, Junr., brought a large quantity of Gypsophila Bristol Fairy which well illustrated its great decorative value. Nearby, Messrs. I. House and Son set up a collection of their valuable varieties of Scabiosa caucasica.

By the Tea Annexe, Messrs. L. R. Russell, Ltd., had an interesting group chiefly of shrubs. This included Datura (Brugmansia) Knightii, bearing several large, pendulous double white flowers, Musa japonica (M. Basjoo), Hedychium Gardnerianum, Solanum jasminioides and some Clematis. Messrs. C. Engelmann, Ltd., had a good collection of greenhouse Carnations, which included Orange Sunstar, Topsy, Eldorado and Saffron.

Roses were particularly well-shown. Messrs. Alex. Dickson and Sons had large masses of Lady Worthington Evans, Margaret Dickson Hamill, Lady Mary Elizabeth, Betty Uprichard and Lady Hillingdon. Mr. J. H. Pemberton staged vases of Golden Emblem, Los Angeles, The Adjutant, Paul's Scarlet Climber and other good garden Roses. Messrs. B. R. Cant and Sons included Red Letter Day, K. of K., Betty Urichard and Sovereign in their collection, while Messrs. Rich and Cooling had a few vases of Roses with herbaceous Phlox.

Fruit and Vegetable Committee.

Present: Mr. E. A. Bunyard (in the chair), Mr. W. H. Divers, Mr. H. Markham, Mr. F. Jordan, Mr. J. Wilson, Mr. T. Pateman, Mr. G. F. Tinley, Mr. E. Harriss, Mr. H. S. Rivers, Mr. A. Bullock and Mr. A. N. Rawes (Secretary).

Mr. T. Pateman, Brocket Hall Gardens, Hatfield, exhibited Black Currant Florence, which received an Award of Merit on July 22, 1924. This variety was found growing in a hedgerow at Biggleswade some forty years ago. It is a very fine late Black Currant of exceptionally good flavour, and the fruits will hang until September. The Award of Merit previously granted was confirmed.

Mr. E. A. Bunyard showed fruits of the Mirabelle Plum and Cambridge Gage; the latter is a very heavy cropping variety, and grown largely for market in the Cambridge district. It is partly self-fertile and a very useful variety for pollenating other Plums.

Messrs. Daniels Bros., Ltd., Norwich, showed this Black Currant September Black; Messrs. Laxton Bros. showed the Veitchberry, and Mr. J. J. Kettle a group of Raspberries and Wineberries.

SHROPSHIRE HORTICULTURAL.

Many circumstances combined to make the opening day of the Shrewsbury Floral Fete an unusual success. The show was held on August 17 and 18. August 16 was a very wet day in the west and midlands, and rain fell incessantly during the morning at Shrewsbury, but the afternoon was pleasant and the evening gave promise of a fine day to come. This promise was fulfilled, and the opening day was bright and fine—Queen's weather—to greet Her Majesty, who, accompanied by the Duke of Cambridge, visited the show about 10 a.m., and visited most of the tents and remained an interested visitor for a considerable time. In addition to the fine weather and the presence of Queen Mary, there was the success of the show from a purely horticultural standpoint; indeed, this was one of the finest shows held at the old-fashioned county town of Shropshire, whose streets run "up hill and down,' and where half-timbered houses are numerous and historic associations abundant.

Non-competitive displays were particularly fine and constituted a considerable part of the show; they were as varied as they were interesting and beautiful. In competitive classes the array of large groups was imposing, while the contributions of Roses, hardy flowers, Gladioli, Dahlias and floral designs were all splendid; fruits were better than usual and vegetables quite up to the usual high standard expected at Shrewsbury.

Judging commenced at 9 a.m., and the public were admitted at 10.30 a.m.; by 11 a.m. the tents were crowded and note-taking was an extremely difficult business.

Groups and Plants.

There were four competitors for the Shrewsbury Cup and £45 offered as first prize for an artistic display of flowering and foliage plants arranged on a space of 300 square feet, and these awards were secured once again by Messrs. Jas. Cypher and Sons with a particularly graceful, elegant and bright display wherein Lilium auratum, L. speciosum, Francoa ramosa, Humea elegans, tall and brilliant Codiaeums, Acalyphas Gesneras, Cattleyas in variety, Cypripediums, Caladiums, Humeas, Fuchsia fulgens and two fine examples of Laelia elegans were pleasingly associated against a background of Palms and Bamboos. Second prize was awarded to Mr. W. Holmes for a very handsome exhibit in which Ixoras, Liliums and Codiaeums were used with fine effect. Sir G. H. Kenrick (gr. Mr. J. Macdonald), Edgbaston, was placed third with a very happy arrangement in which Ixoras and Oncidiums were conspicuously good; Mr. Manning, fourth.

In the class for a decorative group of foliage plants arranged on a space of 250 square feet, the premier award was won by Messrs. Jas. Cypher and Sons with a beautiful and characteristic display in which fine Palms, brilliant Codiaeums, bright Dracaenas, bold Anthuriums, varieties of Begonia Rex, Selaginellas, Phyllanthus, Caladiums, the variegated Pineapple, and Acalyphas were disposed in graceful and rich effect. Second, Mr. W. Holmes, Chesterfield, who must have been very few points behind the Messrs. Cypher, as his Codiaeums were especially bright; third, Mr. W. R. Manning, Dudley; fourth, Sir G. W. Kenrick.

There was only one collection of Orchids but this was a good one and secured the first prize for J. McCartney, Esq. (gr. Mr. Potts), Hey House, Bolton, Cattleya Venus, C. Hardyana, Laelio-Cattleya Profusion, Odontoglossum grande, and Cypripediums in variety were included in the group. A trophy was added to the first prize.

In the county class for a group of plants, A. M. Bamber, Esq. (gr. Mr. Bremell), Wellington, led with a pleasing exhibit of Francoa ramosa, Liliums, Cypripediums, Fuchsias and trailing Lobelias; second, Mr. H. H. Howell.

By far the finest group of Begonias was the one contributed by Messrs. Blackmore and Langdon, who made a splendid display of fine plants of grand varieties; second, Mr. A. M. Bowles, Wellington; third, Mr. H. Hewitt, Shrewsbury. For a smaller group of Begonias, H. Fielding, Esq. (gr. Mr. Reynolds) won first prize.

First prize for a group of aquatic plants and flowers was won by Messrs. Bowles and Skarratt who had a charming little pool of Nymphaces surrounded on three sides by Bamboos, Carex, Astilbes and Senecios with a low rock work in front, planted with Heaths, Funkias, Astilbes and Sparaxis; second, Mr. W. Taylor, Grimshill, Salop.

Florists' Flowers.

The handsome trophy and £15 offered as first prize for a collection of Roses arranged artistically on a space twenty feet by four feet, were won by Mr. T. Robinson, Nottingham, with a brilliant display of clean flowers; conspicuous in this exhibit were the columns of Mrs. H. Bowles, W. F. Drew, Madame Butterfly, Independence Day and Lord Charlemont, and the baskets of Betty Uprichard, Hortulanus Budde, Phyllis Bide and Madame Abel Chatenay; second, Messrs. Gunn and Sons; third, Messrs. Bees, Ltd.; fourth, Messrs. S. McGredy and Son.

The several entries in the class for a collection of large-flowered Gladioli combined to produce a fine effect, as each was arranged on a space fifteen feet by four feet. A trophy valued at fifteen guineas was added to the first prize of £10. Premier honours were awarded to Messrs. Hewitt and Co. for baskets of spikes pleasingly arranged, but in many instances there were few opened blooms on the spikes; second, Mr. W. E. Samuel, Wrexham, who had finer flowers but a stiff arrangement; third, Messrs. G. Mair and Sons, Prestwick, who had wonderfully fine flowers on grand spikes (we counted so many as twelve and thirteen flowers on the spikes), while the arrangement was quite good; fourth, Mr. Ivor Thomas, Liverpool. We certainly could not understand the basis of judgment in this class.

Messrs. Hewitt and Co., Mr. W. E. Samuels and Messrs. Clements, Dally and Co. were placed in the order of mention in the class for primulinus varieties.

Messrs. C. Engelmann, Ltd., won the trophy and first prize for a collection of perpetual-flowering Carnations arranged on a space eighteen feet by five feet; the Saffron Walden firm had fine masses of Laddie, Red Laddie, Saffron and Orange Sunstar. For a smaller collection, Mr. Charles Wall won the premier honours.

Messrs. W. Treseder, Ltd., exhibited the best collection of Dahlias arranged on a space twenty feet by five feet. The firm made a capital display, showing Mrs. E. Beynon, White King, Nancy, and many other varieties, great and small, and all without wires or any other kind of artificial support. The same firm showed the best collection of Cactus Dahlias and here contributed a handsome display of, among others, Honesty, May Murray, Edgar Jenkinson and Ballet Girl.

Hardy Flowers.

First prize for a group of hardy flowers arranged on a space of 250 square feet was won by Messrs. Bees, Ltd., with a gorgeous exhibit of sheaves of Hollyhocks and Gladioli, masses of Kniphofias, Lilium auratum, L. speciosum, Lobelia Hunstman, Phloxes, Pyrethrum Firefly, Agapanthus Mooreanus albus Poterium obtusatum, Helianthuses and Astilbes, all finely arranged.

Messrs. M. Prichard and Son were placed second for a grand display in which Poterium obtusum, Kniphofias in variety, Crinum Powelli album, C. Krelagei, Gladioli, Montbretias, Trollius, Astilbes, Rudbeckias and Agapanthuses; third, Messrs. G. Gibson and Co., Leeming Bar.

Messrs. Bees, Ltd., appeared to be the only exhibitors of a collection of Lilies and other bulbous plants arranged on a space of 100 square feet. They were awarded first prize for a group composed of masses of Lilium Henryi, L. speciosum, L. tigrinum, L. Sargentiae, Gladioli in great variety, Crinum Powellii, C. P. album, and Galtonia candicans.

Messrs. Bees, Ltd., were also successful in the class for eighteen bunches of hardy flowers staged on a ground space of twelve feet by five feet.

Messrs. Bees secured the first prize in the new class for a collection of Montbretias, making a capital display on a ground space eight feet by four feet.

In the county class for a dozen bunches of hardy flowers T. H. Shorting, Esq. (gr. Mr. Butler), Broseley, was the most successful competitor, Capt. Bibby coming second.

Floral Decorations.

One large tent was filled with floral decorations and there was a keen competition for the prizes, so much so, indeed, that fifth and sixth prizes were awarded in several classes.

The best table decoration, Roses excluded, was a charmingly elegant arrangement of Gloriosas, Francoa ramosa, red Honeysuckle, tiny Celosia plumes, and a few small Cattleyas; second prize was awarded to Miss N. Warren, Darwen, for a combination of Gloriosas, Francoa, small Pentstemons and Humea elegans; third, Miss M. Powell, Barry; fourth, Mrs. W. H. Reynolds, Tettenhall, with pink Carnations and Francoa sprays.

In the other table decoration class Roses only were allowed, and here there were a dozen entrants, and Mrs. J. Nixon led with a clean design of light orange Roses in low, dark baskets; second, Miss Newman, who showed Independence Day in low glass bowls; third, Mrs. Madeley, Wem, with Ophelia.

Mr. Charles Vickers led for a bride's bouquet and two bridesmaids' bouquets, with the former consisting of white petalled Cattleyas of the C. gigas type, with purple and pale yellow lips, and white Odontoglossums. The bridesmaids' bouquets were of deep heliotrope, red-flecked Carnations and Cattleya Loddegesii. Second prize was awarded to Messrs. A. Adshead and Son, who had white Cattleyas, Carnations and Francoa in their bride's bouquet, and made up the bridesmaids' bouquets of deep scarlet Carnations; third, Messrs. Hewitt and Co.

Messrs. Hewitt and Co. obtained first prize for a bride's bouquet (white or coloured flowers allowed), with a design in mauve Cattleyas, mauve and white Odontoglossums and short sprays of Francoa; second, Messrs. A. Adshead and Son; third, Mrs. J. Nixon.

For a basket of cut flowers, Orchids allowed, Mrs. J. Nixon was placed first with a gorgeous arrangement of Anthuriums, Gladioli, Clivias, Montbretias and Francoa; second, Mr. C. Vickers, with Cattleya Dowiana, yellow Arums, buff Carnations and Gerberas; third, Messrs. A. Adshead and Son.

In the basket class, where Orchids were not admitted, there were many fine exhibits. Mrs. J. Nixon led with yellow primulinus Gladioli, mauve Delphiniums, Thatictrum dipterocarpum Astilbe plumes and Maple foliage—a very bold and handsome effort; Messrs.

A. Adshead and Son second, with bronze Chrysanthemums and soft red and yellow Gladioli; third, Miss Newsham.

Mr. W. Weaver, Mold, was successful in other classes.

DESSERT FRUITS.

In the class for a decorated table of dessert fruits, the collection to consist of twenty-four dishes, in not fewer than nine distinct kinds, there were six competitors for the Champion Trophy and £25 offered as first prize. These awards were won by the Duke of Newcastle who showed a fine collection that included excellent examples of Black Hamburgh, Chasselas Napoleon and Muscat of Alexandria Grapes, Pineapple Nectarines, Triomphe de Vienne Pears, Dymond and Gros Mignonne Peaches, Lady Sudeley Apples, Jefferson Plums, Figs and Melons; he led with a total of 202 points. Second prize was won by Lord Belper (gr. Mr. J. McCartney), Derby, with 181 points, his set containing fine Muscat of Alexandria and Muscat Hamburgh Grapes, and Sea Eagle Peaches; third, the Marchioness of Tweeddale (gr. Mr. A. Bean), Yester, with 168½ points; fourth, Sir Cuthbert Quilter (gr. Mr. A. New), with 157½ points.

Col. Haywood Lonsdale (gr. Mr. J. Mills), Shevington Hall, led for a collection of twelve dishes of fruits, showing good Grapes, Peaches, Plums and Melons. The same competitor excelled in the class for nine dishes of fruits.

Mr. S. Withers was successful in the county classes for Peaches, dessert Apples and culinary Apples, while Col. T. Wickin excelled for Plums.

GRAPES.

The Duke of Newcastle was successful in winning the principal award in the class for a dozen bunches of Grapes, in four or more distinct varieties. He exhibited a fine set and the bunches were pointed as follows:—Muscat of Alexandria, 7½, 7½, 7 and 7; Madresfield Court, 9, 9, 8 and 8½; Muscat Hamburgh, 8 and 7½; and Black Hamburgh, 9 and 8; total 96. Second prize was won by the Pwll-y-Coch Hotel (gr. Mr. W. Owen), Colwyn Bay, with 93 points, the Madresfield Court and Muscat of Alexandria being finely represented; third, R. J. Corbett, Esq. (gr. Mr. J. Jones), Towyn, with 86½ points; fourth, Messrs. J. Webber and Sons, Minehead, with 72½ points.

Lord Belper had the best four bunches of Grapes, two black and two white, followed by the Earl of Lichfield (gr. Mr. J. Smith), Shugborough Hall. These exhibitors were also successful in numerous other classes. The Earl of Coventry (gr. Mr. H. Wilson), Croome Court, led for two bunches of Black Hamburgh Grapes.

Lady Juliet Duff (gr. Mr. Weaver), Coombe Court, Kingston, scored for two bunches of any other black Grapes, and G. W. Mellor, Esq. (gr. Mr. C. Price), Abergele, had the best two bunches of White Muscats.

In the county classes E. G. Griffiths, Esq. (gr. Mr. Lee) led for Black Grapes and Col. H. Lovell led for White Muscat Grapes, with Capt. Bibby second.

VEGETABLES.

Collections of Vegetables were numerous and the produce shown was of high quality. Viscount Hambledon (gr. Mr. Turnham), Henley, won the first of Messrs. Sutton's prizes for nine distinct kinds, with Mr. T. M. Jones, Llandilo second. For Messrs. J. Carter's and Co.'s prizes for nine dishes, Lord Leconfield (gr. Mr. Streeter), Petworth, was awarded premier honours, while for Messrs. Clibran's prizes Mr. W. Robinson, Garstang, was the most successful competitor.

In the class provided by Messrs. Dickson and Robinson, Mr. T. M. Jones led, while in the class provided by Messrs. J. Peed and Son, Mr. W. Wheildon, Coventry, beat Mr. W. Robinson. Mr. A. H. Hickman and Mr. T. Bowen, Aberanan, were placed first and second respectively.

In the open class for a collection of twelve kinds of Vegetables the Silver-Gilt Medal and first prize were won by Messrs. J. Jones and Son, Ammanford, with a superb set of Carrots, Runner Beans, Celery, Leeks, Peas, Potatos, Tomatos, wonderful Parsnips, Cauliflowers, Beet and Cucumbers; second, Viscount Hambledon

NON-COMPETITIVE.

As already stated, the non-competitive exhibits were very fine; indeed, it was difficult to choose a few for special commendation. It must suffice, therefore, to state that the Hon. Vicary Gibbs (gr. Mr. Edwin Beckett), Aldenham House, Elstree, arranged a surpassingly fine display of vegetables, every dish in perfection. The arrangement was unusual, for in addition to the more substantial part of the exhibit, where Peas, Celery, Leeks, Carrots, Beet and Cauliflowers were disposed against a trellis background, there were several separate tables of choice vegetables, the intervening spaces being planted with perfect Cabbages, Savoys, Kales, Lettuces, Maize and Capsicums, while a little gravel path led around among the plots and tables, and the whole was surrounded by a green grass verge. Messrs. Sutton and Sons also contributed a very fine exhibit of vegetables, while the King's Acre Nurseries filled the end of one section of the big tent with a grand lot of fruit trees in pots, and Mr. W. J. Unwin, Histon, was responsible for a beautifully arranged group of well-grown Gladioli.

MEDAL AWARDS.

Large Gold Medal and Special Award.—To the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree; Mr. W. J. Unwin, Histon; and the King's Acre Nurseries.

Large Gold Medal.—To Messrs. Sutton and Sons, for vegetables; Messrs. E. Webb and Sons, for vegetables, flowers and fruits; Mr. Walter Taylor, Shrewsbury, for alpine flowers; Messrs. Bakers, for formal garden; Messrs. Dickson and Robinson, for Gladioli, Lilies, etc.; Messrs. Jarman and Co., for hardy flowers; and to Mr. H. Woolman, for Dahlias.

Gold Medal.—To Messrs. Bakers, for floral designs; Mr. H. Clarke, for hardy flowers; Messrs. Daniels Bros., for a miscellaneous display; Messrs. Dobbie and Co., for Zinnias and Roses; Messrs. F. E. Fairbairn and Son, for Phloxes; Messrs. Isaac House and Son, for Scabious; the King's Acre Nurseries, for Roses; Mr. J. Klinkert, for topiary work; Mr. E. Murrell, for Roses; Messrs. J. Peed and Son, for stove and greenhouse plants; Messrs. M. Prichard and Son, for floral designs; Messrs. Toogood and Sons, for vegetables and flowers; Mr. C. Vickers, for floral designs; and to the Shropshire County Council for an educational exhibit.

Silver Medal.—To Messrs. Allwood Bros., for Carnations; Mr. E. G. Bayley, for flowers and vegetables; Messrs. Blackmore and Langdon, for Phloxes; Messrs. Bowen and Skarratt, for alpine plants; Dickson's Nurseries, for Roses; Messrs. Dobbie and Co., for Potatos; Mr. H. N. Ellison, for Ferns, etc.; Messrs. J. J. English and Son, for Roses; Messrs. J. Forbes, Hawick, for hardy flowers; Messrs. Jean and Trowbridge, for alpine plants; Messrs. Jones Bros., for Carnations, etc.; Mr. John Jones, for Violas; Messrs. J. Kelway and Son, for Gladioli; Messrs. Maxwell and Beale, for alpine plants; Mr. E. H. Parsons, for Apples and other fruits; Mr. W. H. Simpson, for Antirrhinums; Messrs. Stark and Son, for Sidalceas; Mr. W. Wells, for hardy flowers; Mr. B. Waterhouse, for hardy flowers; Mr. James Watson, for hardy flowers; Miss Thompson, for Cacti; and to Mr. W. Watkins, for hardy flowers.

HARROGATE.

The horticultural section of the joint agricultural and horticultural show held at Harrogate on August 5 and 6 was opened by the Mayoress and appears to have been a successful venture. This section was organised by a Committee with the Rev. Bernard Hall as its Secretary. The exhibits were housed in a large marquee and were contributed by growers in various parts of the country.

One end of the marquee was filled with Begonias, Liliums, Trachelium caeruleum and other flowers associated with Davallias and two large Platyceriums, all admirably arranged by Mr. J. G. Besant, Superintendent of the Harrogate Corporation Parks. No prizes were offered, consequently there was no direct competition, but medals were awarded in accordance with the extent and beauty of the displays, and these awards were as follow:—

Large Gold Medals.—To Mr. T. Robinson, Nottingham, for Roses; Messrs. Edward Webb and Sons, Stourbridge, for flowers; and to The Harrogate Corporation (Parks Superintendent, Mr. J. G. Besant) for a group of plants.

Gold Medals.—To Mr. C. Gregory, Chilwell, for Roses; Messrs. G. Gibson and Co. Leeming Bar, for herbaceous flowers; and to Messrs. Backhouse Nurseries (York) Ltd., for a formal garden and herbaceous flowers.

Large Silver-Gilt Medals.—To Messrs. W. and J. Brown, Peterborough, for Roses; and to Messrs. Maurice Prichard and Sons, Christchurch, for alpine plants.

Silver-Gilt Medals.—To Messrs. Kent and Brydon, Darlington, for Phloxes, etc.; Mr. P. Gardner, Addingham, for a formal garden and rockery; and to Messrs. F. G. Mackenzie and Sons, Ilkley, for a formal garden.

Large Silver Medals.—To Messrs. Harkness and Sons, Bedale, for herbaceous flowers; Messrs. Isaac House and Son, Bristol, for Scabious; and to Messrs. Maxwell and Beale, Broadstone, for alpine plants.

Silver Medals.—To Mr. W. Braithwaite, Bedale, for hardy flowers; Mr. R. V. Roger, Pickering, for alpine plants; Mr. S. Gardner Leeds, for hardy flowers; Mr. A. H. Todd, Pocklington for Violas; Messrs. Whitaker and Wilson, Leeds, for hardy flowers; and to Messrs. A. Greenwood and Co., Wetherby, for alpine flowers.

Messrs. Joseph Cheal and Sons, Ltd., Crawley, were highly commended for new Dahlias.

Messrs. Wheatcroft, Gedling, received an Award of Merit for the new Rose The Princess Elizabeth; and a similar award was made to Mr. T. Hancock, Mansfield, for Rose Charming, Princess.

In the amateurs' section Col. C. F. Tetley, D.S.O., Kirkman Bank, Knaresborough (gr. Mr. H. G. F. Owram), received the Harrogate Agricultural Society's Silver-Gilt Medal for the best exhibit. Mr. J. K. Woodmansey, Ye Olde Manor House, Knaresborough, gained a Silver Medal and the *Gardening Illustrated* Medal for British Ferns. V. H. Shepherd, Esq., Knaresborough (gr. Mr. R. M. Stockhill), was awarded a Silver Medal for Sweet Peas. Dr. W. Lee Spink and Mr. C. F. Spink, North Dene, Balmoral Avenue, Great Yarmouth, received a Silver Medal for a floral display, and Miss Worth Holbeach, was awarded a Silver Medal for an exhibit of Cacti.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

Mr. Chas. H. Curtis presided at the monthly meeting of this Society, held at the R.H.S. Hall, on Monday, August 8. Six members were elected, and five members withdrew from their deposit accounts sums amounting to £98 7s. 0d. Sick pay for the month, on the Ordinary side, amounted to £97 19s. 11d., and on the State Section to £74 13s. 8d., while maternity claims came to £2 10s. 0d. The sum of £75 1s. 6d. was granted to insured members for dental and optical treatment and ten new cases were considered.

The Secretary produced the Government Auditors' report of the State Section accounts of the Society for the year 1926, all were certified as correct. The resignation of Mr. J. Craik from the Committee was received with regret

TRADE NOTES.

The Board of Trade, after consultation with the Minister of Agriculture and Fisheries, the Home Secretary and the Secretary of State for Scotland, has exempted farm and garden seeds from the requirement of the Merchandise Marks Act, 1926, that imported goods sold or exposed for sale under a British name or trade mark must bear an indication of origin.

Jubilee of a German Nursery Firm.—The nursery firm of Otto Mann, Leipzig, celebrated on August 15, the fiftieth anniversary of its foundation, and at the same time three members of the staff were in a position to look back upon twenty-five years' continuous service with the firm.

ANSWERS TO CORRESPONDENTS.

Dracaena Leaves Damaged.—*R. W. R.* In some cases the leaves received showed damage due to drip caused by faulty glazing or condensation. The damage on other leaves appears to be due to the biting action of some beetle, and we suggest that you place traps among the plants and also give attention to the glazing.

Cherry Tree Failing to Bear Fruit.—*J. D. W.* It may be that the Cherry fails to bear fruit because the soil is lacking in lime, but it may also happen that it needs to be cross-fertilised by pollen from another variety. You do not state, however, what your variety is.

Grapes Failing.—*J. R. B.* Over-cropping, combined with low temperature and the wet condition of the outside border, are probably the causes of the trouble with your Grapes.

Names of Plants.—*E. G.* 1, Magnolia grandiflora var. lanceolata; 2, Calycanthus occidentalis; 3, Spiraea Douglasii. *T. B.* Conifer, probably Thuya dolabrata; the other is probably Daphne Mezereum, but both specimens were too scrappy for correct determination. *H. B.* Daphne Laureola.

Peach Splitting.—*H. G.* The ripe Peach, possibly a fine fruit of Crimson Galande, probably split because solid or liquid feeding had been given too freely after the stoning period had finished; the stimulating treatment was carried on too late and should have been withheld a full three weeks before the fruit ripened.

Phloxes Diseased.—*D. W.* Your Phlox plants are suffering from eelworm disease. The eelworms are now migrating down the stems, so that action should be taken so soon as possible to destroy these if such plants are to be propagated from. Full details of the disease and its control appeared in the *R.H.S. Journal* Vol. 49, part 2, July, 1924, page 203.

Vine Leaves Mildewed.—*F. E. S.* The cause of injury to your Vine leaves is mildew which is very prevalent this season in cold houses where the temperature has fallen very low at night. This trouble shows plainly on the leaves first and if you had dusted the foliage with flowers of sulphur a fortnight ago, when you first saw the small specks, it is probable the disease would not have spread. As yours is not a bad case, remove any affected berries and lateral leaves, and dust others that are slightly affected. If you keep the border well watered, the house ventilated carefully and the atmosphere moderately moist you should not be troubled further this season.

Communications Received.—A. T.—W. F. and C.—Heatherbank—J. C. G.—W. C.—F. P.—R. B. W.—D. C.—Unit.—N. T.—G. P.—L. A. H.—H. W.—H. G. K.—G. F. G.—J. E. W.—A. C.

MARKETS.

COVENT GARDEN, Tuesday, August 16th, 1927.

(All 48's except where otherwise stated).

Plants in Pots, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crotons, doz.	30 0-45 0
Cyrtomiums ...	10 0-25 0
Fuchsias, 48's, per doz. ...	12 0-15 0
Hydrangeas, —blue, 48's, per doz.	24 0-48 0
Marguerites, 48's, per doz. ...	12 0-15 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Roses, Polyantha, 48's, per doz.	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	9 0-12 0
—cuneatum, per doz. bun. ...	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short ,, ...	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. ,, ...	1 0—1 6
short ,, ...	0 6—1 9
Asters, white, per doz. bun.	4 0—8 0
—coloured, per doz. bun. ...	4 0—6 0
—singles, coloured, per doz. bun.	3 0—4 0
Carnations, per doz. blooms .	1 3—3 0
Chrysanthemum Sanctity, per doz. blooms...	2 6—5 0
—Mrs. J. Pearson, per doz. bun.	5 0-10 0
—white Duchess, per doz. blooms	6 0—8 0
—yellow, per doz. blooms ...	2 6—3 0
—bronze, per doz. blooms...	1 6—2 6
—spray pink, per doz. bun.	9 0-10 0
—spray yellow, per doz. bun.	10 0-12 0
Coreopsis, per doz. bun. ...	1 0—1 6
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz. ...	1 9—2 6
Daisies, white, large, doz. bun.	2 6—3 0
Delphinium, blue, per doz. bun.	6 0—9 0
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	9 0-12 0
Gaillardia, per doz. bun. ...	2 0—2 6
Gardenias, per doz. blooms ...	4 0—6 0
Gladiolus, giant varieties, per doz. spikes—	
—pink shades...	1 0—1 6
—scarlet ...	2 6—3 0
—white ...	1 6—2 0
Gypsophila paniculata, double, per doz. bun. ...	9 0-12 0
Heather, white, per doz. bun.	6 0—9 0
Lapagerias, per doz. blooms .	2 6—3 6
Larkspur, various, per. bun. ...	4 0—5 0
Lilium speciosum album, per bun. ...	3 6—4 0
—short, per doz.	3 0—4 0
—rubrum, long, per bun. ...	3 6—4 0
—short, per doz.	1 6—2 0
—longiflorum, long, per doz.	— 2 6
—short, doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	24 0-30 0
Marigolds, per doz. bun. ...	3 0—4 0
Montbretia, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas ...	36 0-48 0
—Cypripediums	6 0—8 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—2 6
—Madame Butterfly ...	1 6—2 0
—Golden Ophelia	1 6—2 0
—Mrs. Aaron Ward ...	1 0—1 6
—Madame Abel Chatenay ...	1 6—2 0
—Hoosier Beauty	2 6—4 0
—Liberty ...	1 6—2 0
—Molly Sharman Crawford ...	1 6—2 6
—Premier ...	— 3 0
Smilax, per doz. trails ...	3 6—4 6
Statice sinuata, mauve, per doz. bun. ...	6 0-10 0
—latifolia, per doz. bun. ...	6 0—8 0
Scabiosa caucasica, per doz. bun.	3 0—4 0
Stephanotis, per 72 pips ...	2 6—3 0
Stock, per doz. bun.—	
—double white	5 0—9 0
— — mauve ...	6 0—9 0
— — pink ...	6 0—9 0
Sweet Sultans, white, per doz. bun.... ...	3 0—4 0
—mauve, per doz.	3 0—4 0

Remarks.—With the exception of Lilium longiflorum and Lily-of-the-Valley, supplies of practically all other flowers have exceeded the moderate demand during the past week. Asters and double Stocks are somewhat varied in price; these flowers from the open have been damaged by the recent heavy rains and are difficult to clear at a very low price. The quantities of Carnations and Roses exceed the present demand. Some very fine Gladioli are being marketed. Red varieties are the best received so far this season. Chrysanthemums are becoming more attractive; both disbudded blooms and spray varieties are much improved in quality. Some very fine blooms of Duchess, Sanctity and Mrs. Phil Page are available.

In the plant department the trade is very slack, beyond the usual varieties of Ferns and Palms. Flowering plants include Marguerites, blue Hydrangeas, a few Fuchsias, and Campanulas. Pot Chrysanthemums will be greatly welcomed.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beets, New, per doz. bun. ...	— 3 0
Cabbage, per doz.	2 0—2 6
Carrots, New ...	3 0—4 0
Cucumbers, doz.	2 6—3 0
—Flats, 36's, 42's	12 0-16 0
Aubergines, per doz.... ...	2 0—2 6
Leeks, per doz.	3 0—4 0
Lettuce. round, per doz. ...	0 9—1 0
—long	1 0—2 0
Mint, per doz....	1 6—2 0
Marrows, per doz.	2 6—3 0
Mushrooms—	
—cups... ...	2 6—3-0
—broilers ...	1 6—2 0
Onions—	
Egyptian ...	11 0 13 0
—Dutch ...	8 0-10 0
Parsnips, per cwt. ...	4 0—4 6
Peas, per bushel	5 0—6 0
Potatos—	
English ...	5 0—6 0
Radishes, per doz.	1 0—2 0
Savoys, per tally	8 0-12 0
Tomatos, English—	
—pink ...	4 6—5 0
—pink and white	5 0—5 6
—white ...	3 6 4 0
—blue ...	3 0—3 6
—Guernsey ...	3 6 4 0
—Dutch ...	— 3 0
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Beauty of Bath	3 0—6 0
—Gladstone, ½-sieve	1 6—3 0
—Grenadier, per bushel ...	3 0-10 0
Apples, New Zealand—	
—Sturmer Pippin	18 0-23 0
—Other Cooking Apples, per bushel ...	2 6—7 0
— Portugal, per case ...	8 0-10 0
Bananas ...	13 0-22 0
Cherries, English—	
—August Hearts, per 12 lb. ...	10 0-12 0
Figs, per doz....	4 0-12 0
Grape Fruit— per case ...	35 0-42 6
Grapes, English	
—Colmar ...	2 0—3 0
—Black Hamburgh, per lb.	1 6—3 0
Grapes, Alicante	1 6—2 6
—Gros Maroc	1 6—3 0
—Muscat ...	2 6—6 0
—Canon Hall...	2 6—8 0
Lemons, Messina Boxes ...	16 0-25 0
—Naples, per case	25 0-30 0
Melons, each—	
—English and Guernsey ...	2 0-10 0
Canteloup, each... ...	2 0-10 0
Oranges, per case—	
—Cape Navel...	20 0-25 0
—Seedling ...	18 0-20 0
Nectarines, doz.	4 0-12 0
Peaches, per doz.	6 0-18 0
Pears, French— Williams's Bon Chretien ...	4 0—8 0
Pines, case ...	21 0-40 0
Plums—	
—Czardas ...	4 0—6 0
—French ...	4 0—6 0

Remarks.—Trade in general is very slow and the market is over supplied with English Apples, Tomatos, Grapes, Peaches and Nectarines.

GLASGOW.

A severe slump in prices of cut flowers was experienced last week when Gladioli were practically unsaleable at 1s. per box. Quantities changed hands at 3d. per dozen spikes, and special blooms were only worth from 6d. to 8d. for 6's. Other flowers were also cheap, Sweet Peas, Asters and Marguerites being sold at 1d. to 2d. per bunch; Stocks, 2d. to 6d.; Annual Gypsophila, 2d. to 3d.; G. paniculata, 4d. to 9d.; Carnations, 9d. to 1s. per dozen; Roses, 9d. to 2s.; and Asparagus (medium size), 9d. to 1s. Spray Chrysanthemums ranged from 3d. to 6d. per bunch; Bronze Phoenix, 1s. 6d. to 2s. per dozen; Countess (disbudded), 1s. to 1s. 6d. (6's); No. 1 White, 1s, to 1s. 3d.; and Pink, 1s. 3d. to 1s. 6d.

Good business was done in the fruit market at values which may be described as steady to firm. Table Strawberries fluctuated between 9d. and 1s. 6d. per lb.; Black Currants, 10d. to 1s.; Red, 3d. to 5d.; Raspberries, 6d. to 10d.; Gooseberries, 1½d. to 3d.; home Peaches, 6s. per dozen; Victoria Plums, 1s. per dozen; Czar, 4d. to 5d.; Egg, 8s. per sieve; Belgian Cherry Plums, 7s. to 8s.; Spanish Gages, 19s. to 20s.; French Gages, 7s. 6d. per crate; Californian Plums, 16s. to 18s. per 20 lbs.; William Pears, 13s. to 14s. per crate; English Apples, 3½d. per lb.; American Red William Apples, 14s. to 17s. per case; South African Navel Oranges, 14s. to 24s. per case, according to counts; and others, 14s. to 20s.

In the vegetable market Tomatos were a little dearer at 8d. to 9d. per lb.; Marrows made 4s. to 6s. per dozen; Cucumbers, 4s. to 7s.; Cauliflowers, 3s. to 6s.; Lettuces, 1s. to 1s. 6d.; dwarf Beans, 7s. per pot; and Peas, 3½d. per lb.

CATALOGUES RECEIVED.

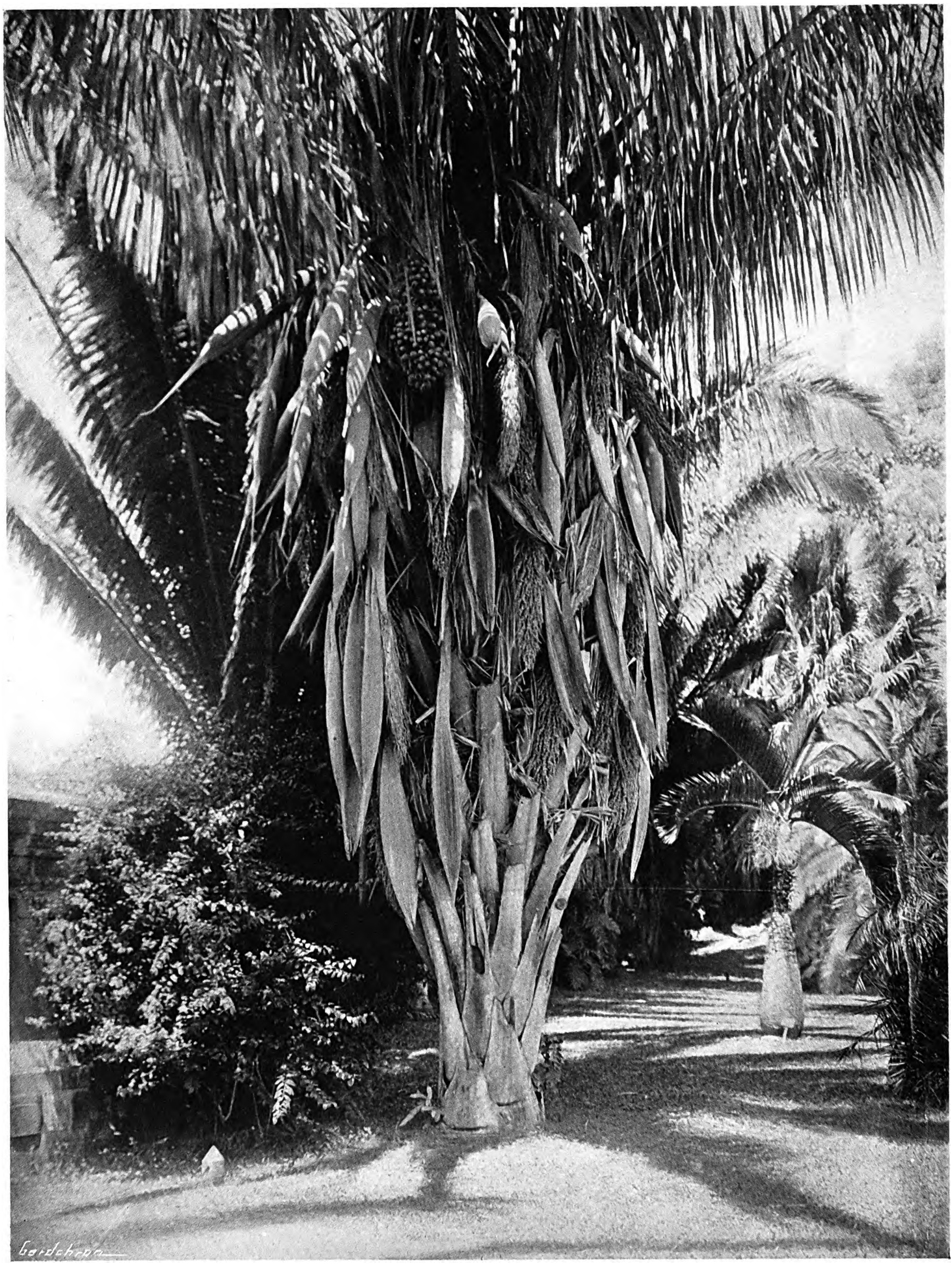
Bulbs.

James Carter and Co. Raynes Park, S.W.20.
Austin and McAslan, Glasgow.
Dicksons Seeds, Ltd., Chester.
W. Cutbush and Son, Ltd., Barnet, Herts.
W. Drummond and Sons, Ltd., 57, Dawson Street, Dublin.
E. Webb and Sons (Stourbridge), Ltd., Stourbridge.
Cooper, Taber and Co., Ltd., 90, Southwark Street, S.E.1. (Wholesale).
H. Prins, Wisbech, Cambridgeshire.

Foreign.

G. Ghose and Co., Town-End, Darjeeling, India.—East Indian Orchids, Liliums, etc.
J. H. Muller, Bloomfield Nurseries, Hillegom, Holland.—Bulbs.

Supplement to the GARDENERS' CHRONICLE. Aug 27 '27



ATTALEA COHUNE IN FRUIT.

THE
Gardeners' Chronicle
No. 2122.—SATURDAY, AUGUST 27, 1927.

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SUPPLEMENTARY PLATE.
The Cohune Palm in fruit.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 59.5°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 24, 10 a.m. Bar. 30.0. Temp. 62°. Weather, Sunny.

Forestry in Great Britain.

No citizen of this country and assuredly no gardener can fail to take an active interest in the afforestation of Great Britain. Indifferent as were most of us, and dilettante as were all our successive governments before the epoch of the Great War, that indifference and dilettantism were mortally stricken by that event, for the war stretched its ruthlessness hard over the three million acres of our woodlands and destroyed nearly 500,000 acres of them. The curious may calculate how vital was the importance of the thousand million cubic feet of timber which this despoiled forest area yielded. In these far-off days when the watchword—how soon forgotten!—was "never again," the Acland Committee appointed by the Coalition Government proposed a wise and far-reaching programme of forest development, which programme it is good to know is in course of execution, not, indeed, at the rate originally contemplated, but, nevertheless, with such speed as to give hope that ultimately all the three million pre-war forest acreage will be restored to timber production, and much of the waste land suitable for growing trees will be brought under tree cultivation. There is, nevertheless, good reason why all patriotic men and women should lend their active support to the efforts of the Forestry Commission and there is probably no better way of doing this than by their becoming members of the Society of Foresters of Great Britain. A subscription of one guinea entitles the subscriber to Associate Membership of the Society, and carries with it the privilege of receiving the *Journal* of the Society which, judged by the first number which has recently been published by the Oxford University Press, is a privilege well worth having. The editor, Mr. H. M. Steven, has prefaced the *Journal* with a most interesting survey of British forestry which, based as it is on the census of woodlands recently made by the Forestry Commission, gives an accurate picture of our forests in the year 1924. What is evident from this survey is that afforestation on an adequate scale in this country is beyond the powers and disposition of the private owner; if it is to be done at all it must be done in the main by the State. The investigations of the Forestry Commission are already leading to the acquisition of much useful information with respect to the species to be planted in different types of soil. Sitka Spruce (Picea sitchensis), of western North America, has proved itself both productive and adaptable, thriving, as Dallimore and Jackson state, from sea-level in mild districts up to a considerable elevation in exposed parts of the Scottish Highlands. Japanese Larch is proving a useful tree for planting under the wet and exposed conditions of the west coast. Douglas Fir (Pseudotsuga Douglasii), though liable to suffer from wind and heavy snows when grown in dense stands on wet ground, nevertheless grows well in more favoured situations. No less important than the growing of timber is its marketing, and the *Journal* points out the sour truth that whereas our annual imports of timber amount to ten million loads, of a value of fifty million pounds, home-grown parcels of timber are disposed of only with difficulty. Here is work for the recently established Forest Products Research Laboratory. One of the most interesting articles in this first number of Forestry is that by Mr. H. M. Steven on the sylviculture of Conifers in Great Britain. First in order of age and dominance of our trees was the Birch, which was the principal tree of the boreal period, that is, the epoch which immediately succeeded the arctic period. Pine followed, but was long in becoming a dominating tree. The Alder immigrated hither, and with it were associated Hazel, Elm, Oak, Lime, Beech and Hornbeam—pollen of all of which trees has been recovered from the remains in Chatmoss, Lancashire. At the dawn of the Christian era, Scots Pine (Pinus sylvestris) was but a subsidiary species in the forests of England but there were Pine forests in the Scottish Highlands. This tree thus had had its ups and downs, and had been, in yet earlier times, more widely spread in this country than it was, say, when Caesar came to Britain. It was not till the sixteenth century that exotic Conifers were largely introduced. During that time Pinus Pinaster and Norway Spruce (Picea excelsa) were brought hither. Parkinson, in 1629, describes and figures Scots Pine, Larch, Spruce and Cypress. These and other Coniferous trees were first planted as ornamental subjects, and it was not till the beginning of the eighteenth century that Coniferous species began to be grown for timber production, but even so, the first species to be planted was the indigenous Scots Pine. But those who would get a clear picture of the present position of Forestry in this country must needs read this and other articles contained in the *Journal* for themselves. If they do we think that they will join the goodly company of the Society of Foresters and thereby encourage the object for the promotion of which the Society was founded—an object which ought surely to have the warm approval of all lovers of their country and their countryside. So long, indeed, as professional zeal on the part of the Forestry Commission does not rob us of our lovely playgrounds and natural Nature reserves—replacing the bog land and the stagged and mossy Oaks by stands of dreary Conifers—we shall all wish both the Commission and the Society of Foresters every success in their efforts and increasing powers for the fulfilment of their afforestation plans.

Supplementary Illustration.—Attalea Cohune—the Cohune Palm—is a native of Honduras and Guiana, but is widely distributed throughout the West Indian Islands. It is a spineless Palm reaching to a height of fifty feet or sixty feet, with large, erect, ultimately spreading, pinnate leaves. The brown fruits, about the size of a hen's egg, are borne in large, pendent clusters as seen in the Supplementary Illustration of a plant growing in the Botanic Gardens, Dominica. From the seeds an oil is expressed which has a pleasant, nutty flavour, and is considered superior to Coconut oil, but hitherto it has been costly to prepare owing to the thickness of the walls of the fruit and the comparatively small size of the kernels. Special machinery has been recently introduced to overcome this difficulty and oil is now being extracted on a commercial scale. The oil is likely to find a ready use in the manufacture of margarine, for which it is said to be very suitable.

Old Florists' Flowers.—It is with very great pleasure we publish the following letter from Sir Daniel Hall, and we hope sincerely that his efforts to get together a collection of florists' flowers of other days will meet with every success:—The John Innes Horticultural Institution is endeavouring to form and maintain a collection of some of the old florists' flowers which have gone out of favour with the amateurs of to-day and are in danger of extinction. Sixty years ago there were successive shows in many of the towns and villages of the North and Midlands of Auriculas and Gold-laced Polyanthus, Tulips, Laced Pinks, Carnations, etc. The growth of the towns deprived the old florists of their gardens, and a new fashion in gardening sprang up which decried the formal beauty of the old florists' flowers, and poured scorn on the rigid canons of showing that were involved. There must, of course, be two schools of gardening—the one which regards flowers as an element in the design of a garden, and the other which regards a garden as a place in which fine flowers may be grown. The old florists were all for the flower; their gardens were often no more than allotments, dominated, perhaps, by a brewery or a gas works, and the opportunity for lay-out or design did not exist. Of course, at some ideal point the two schools meet, and the gardener may paint his design with flowers that are individually perfect. Meantime, however, the florists' flowers very often failed to meet the need of the gardener, for too generally they were difficult to grow in mass, weakly in constitution or awkward in habit, and they have become displaced by varieties that could be trusted to make a show with less care and management. None the less, the standards of excellence which the old florists evolved will reassert themselves, because they were the fruit of long observation and love of the flower. No one, for example, who has once acquired an appreciation of the flat-petalled, fine-textured, smooth-edged petal of the old show Carnation, will ever be satisfied with the modern Carnation, however much he may recognise its vigour, colour and floriferousness. These are essentials; the work of the breeder is to couple them with the earlier excellencies of form and texture. In the same way the formal florists' Tulip has suffered an eclipse in favour of the powerfully-built weather-resistant Darwins and their opposite numbers among the Cottage Tulips. Yet the ideals of the old Tulip fanciers are quietly winning back; the rounded, smooth cup of the florists' flower is being preferred to the square profile of the typical Darwin bloom and must eventually become the standard again, just as the pure base will prevail as superior to the blotched base, however superficially attractive the latter may be. It is necessary, then, to preserve representatives of the old florists' flowers; on the one hand they provide a model, a type of proved excellence to which to breed, and on the other hand they may be useful for crossing purposes to the breeder who is endeavouring to combine the old form with the vigour and useful habit of the modern garden flowers. It is, however, becoming difficult to find many of the old florists' flowers that were famous in their day and it is the hope that some may be found amongst readers of *The Gardeners' Chronicle* that this appeal is inserted. The John Innes Institution desires in particular examples of the old show Auriculas, Laced Pinks and Carnations. It has already been helped in regard to Auriculas, both show and alpine, Gold-laced Polyanthuses and Pinks and Tulips, and it possesses a very representative collection of Pelargoniums and Geraniums. I should be grateful if any of the readers of *The Gardeners' Chronicle* can put us in the way of getting specimens of the show Ranunculus, a flower which seems to have become extinct, though scores of varieties are figured in the florists' books of a century ago. But any of the famous old flowers will be welcome, and I can promise that they will be looked after and increased and will always be available for students, breeders and collectors.

"Gardeners' Days" in Magdeburg.—For several days at the end of August, the town of Magdeburg, in Saxony, is keeping a gardeners' festival in the "Schützenhaus," in the lovely Rotehornpark. On the 27th a delegate conference of the Saxony Fruit-growers' and Gardeners' Society is to be held, and on the 29th the Chamber of Horticulture will hold a reception at which numbers of distinguished people are expected to be present.

Trials of New Roses.—For several years past the Council of the National Rose Society has had under consideration the conduct of trials of new seedling Roses, and from time to time there have been rumours with regard to the site for such trials. The whole matter has again been considered by the Council, and we believe that matters have progressed considerably, indeed, we understand the Society has been offered a suitable site on favourable terms, and if arrangements can be completed satisfactorily, it is most probable that in the near future the Society will be holding its own trials under the superintendence of the Hon. Secretary, Mr. C. Page.

Legacies to Gardeners.—The late Mr. Frank Lloyd, of Coombe House, near Croydon, who died on May 20, bequeathed the sum of £600 to his head gardener, Mr. Mark E. Mills.—Mrs. Mary Anne Smythe, of Newbold Beeches, Leamington, who died on May 14, bequeathed £150 to her head gardener, Mr. George James.—The late Alderman John Ashburner Nix, of Tilgate, Crawley, who died on May 9, leaving property to the gross value of £212,213, left £100 to his head gardener, Mr. E. Neal.

The R.H.S. Daffodil Show, 1928.—The Royal Horticultural Society's Daffodil Show will be held next year on April 17 and 18. The schedule of eighty-eight classes is ready, and may be had on application to the Secretary, R.H.S., Vincent Square, Westminster, S.W.1. The competitions are open to all residents in Great Britain, Ireland and the Channel Islands, whether they are Fellows of the Society or not, and there are no entrance fees. In addition to the open classes, there are special sections for amateurs, novices who have never won a first prize at a R.H.S. Daffodil Show, and market growers. For the sake of growers who do not purchase the expensive new varieties, it has been stipulated in a number of classes that the varieties exhibited must have been listed in a retail catalogue in the autumn of 1927 at a price not exceeding a certain specified sum. It is hoped that these classes will attract exhibitors who are not Daffodil specialists, but who are keen admirers of these spring flowers.

Mr. F. S. Sillitoe.—In the King's Birthday Honours List of the present year appeared the name of Mr. F. S. Sillitoe, as the recipient of the M.B.E. for services rendered as Superintendent of Gardens, Khartoum, Sudan. Mr. Sillitoe was selected for his present position by the Director of the Royal Gardens, Kew, and left England to take up his duties in March, 1903, so he is one of the oldest of Sudan Government officials. The history of the final overthrow of the Khalifa by Lord Kitchener at Omdurman, in September, 1898, after the country had been ravished by the Dervishes for thirteen years is well-known, following the death of General Gordon and of the Mahdi in 1885. The present Palace at Khartoum, the residence of the Governor General, is erected on the site of the one occupied by Gordon, and has a garden of some eight acres, laid out and planted with lawns, trees and flower beds, in fact, in keeping with Kew or other large English gardens. Four grass tennis courts are planted with Cynodon Dactylon. The heat is intense, and there is practically no rainy season, so that irrigation is carried on throughout the year, water being pumped up by small, electrically-driven, centrifugal pumps from the Blue Nile, in which there is a difference of some twenty feet between high and low flood. During the winter season Bougainvilleas provide a wonderful blaze of purple. Among Roses only the Hybrid Teas succeed, but they are a great success. The following trees and shrubs add to the brilliant show of colour:—Poinciana regia, Spathodea nilotica, Cassia Fistula, C. grandis, C. siamea, Bauhinia purpurea, B. variegata, Euphorbia pulcherrima (the Poinsettia), Bignonia venusta, Beaumontia grandiflora, Quisqualis indica, Antigonon leptopus, Ipomaea Leari, and other species; Tecoma stans and Caesalpinia pulcherrima. Phlox Drummondii, Zinnias, Cosmeas, Petunias, Dianthi, Verbena erinoides, Celosias, Sunflowers, etc., thrive from November till February. Mr. Sillitoe was born at Redhill, Surrey, in 1877, and commenced his training with Messrs. J. Cheal and Sons, of Crawley, staying there four years. Possessing the spirit of adventure and a desire to go abroad, he went to the Chelsea nurseries of Messrs. J. Veitch and Sons, and for two years worked in their New Plant Department under the late Mr. John Heal. Then followed three years at Kew in the Tropical Orchids and Propagating Departments. A curious coincidence is that while there he and Mr. Dawe—now in Sierra Leone—were equal firsts in the British Botany course, and within a year Mr. Dawe was his nearest Kew neighbour, in Entebbe, Uganda, and at Christmas, 1904, Mr. Dawe called on him at Khartoum, having travelled the whole Nile route from the south. In 1919, Mr. Sillitoe made a tour of the Yei River valley, along the Congo border, and made a fine herbarium collection from an area not touched since Schweinfurth visited it in 1870. During last winter, Mr. Sillitoe spent some months at Port Sudan, on the Red Sea, laying out the Public Gardens. He is now in England, but is returning this month to complete that work and also some further schemes in Khartoum. His Highness the Sultan of Egypt conferred upon Mr. Sillitoe the Order of the Nile in 1919.

MR. F. S. SILLITOE, M.B.E.

Jubilee at a German Horticultural College.—The Higher Horticultural College at Koestritzt, in Germany, was founded so long ago as 1887, and is celebrating this year its fortieth anniversary. At the same time, the seventy-fifth birthday of the founder (and for many years Principal) of the college, Dr. Settegast, is being celebrated. Quite a round of festivities marked this double anniversary, which took place at the end of July and beginning of August, including a festival service on Sunday morning in the local church, followed by a luncheon at the "Goldene Löwe."

The Selborne Society.—The appeal which Lord Montagu of Beaulieu, Lord Avebury and Sir John Otter are making on behalf of a new Bird Sanctuary for the recently enlarged Borough of Ealing (see p. 141) is a reminder that when the Selborne Society was started, more than forty years ago, it was first of all for the "Protection of Birds," and afterwards of "Plants" and "Places." A great deal has recently been done for the feathered fauna, both by Societies which have since sprung up, and by individuals, but it will be a long time before there are too many bird sanctuaries, and it must be remembered that every one, if properly maintained, is an open space unspoiled. Some time ago, the Plant Protection Section of the Selborne Society, under the presidency of Dr. Rendle, Keeper of Botany in the British Museum, started a new and vigorous campaign, which included the circulation of many thousands of leaflets written specially for teachers, for pupils and the general public, respectively. The lean years of the war, unfortunately, however, stopped it for a while, but the pressing need for renewed action is brought home to all thoughtful persons every day, for what pleasure can they derive from "Places" which are carpeted with litter instead of with flowers and Ferns? We understand that the Selborne Society intends to take up activities in this direction again.

A New Journal of Agriculture.—The Ministry of Agriculture for Northern Ireland has published the first issue of a *Journal* dealing with agricultural and horticultural subjects. It is published annually by His Majesty's Stationery Office, 15, Donegall Square West, Belfast, price 2s. 6d. net. The more important articles include "Notes on Experiments relating to Loss of Vigour in Stocks of Potatos," by Mr. W. J. Megaw; "Experiments in Northern Ireland with various types of Phosphatic Fertilisers," by Dr. G. S. Robertson; "The Control of American Gooseberry Mildew in Northern Ireland," by Mr. Arthur E. Muskett; and "The Cutting of Majestic Seed Potatos," by Mr. J. G. Rhynehart. In a foreword, the Rt. Hon. E. M. Archdale, Minister of Agriculture for Northern Ireland, states that the object of the *Journal* is to provide a medium for the publication of the results obtained by the different Research Divisions attached to the Ministry of Agriculture for Northern Ireland. The article on the control of American Gooseberry mildew deals with one of the most serious diseases with which fruit growers in Ireland have had to contend during the past two decades. Two sprays with polysulphide specific have proved to be effective in controlling American Gooseberry mildew, the first spray to be applied immediately after flowering, and the second three weeks later. Ammonium polysulphide used with soft soap has given the best results, and these are followed very closely with those obtained by using lime sulphur with skimmed milk or flour paste as spreading and sticking agents. With regard to the loss of vigour in stocks of Potatos, Mr. Megaw states it has been definitely established that deterioration is mainly, if not altogether, due to a group of virus diseases, the two most common of which are leaf-roll and mosaic diseases. Advice is given that where leaf-roll or mosaic is present to any serious extent, a change of seed is required. With regard to the cutting of seed Potatos, it is indicated that no serious disadvantage may be expected from the practice of cutting seed Potatos of the Majestic variety, provided such cutting is done at the time of planting. If it is not possible to cut the tubers as they are being planted, it is recommended that the period between cutting and planting should be as short as possible, and the cut tubers kept in a moist atmosphere.

Bulbs for the Royal Parks.—The Office of Works, in conjunction with the Empire Marketing Board, has decided to purchase 170,000 British-grown bulbs for planting in the Royal Parks, London. The bulbs will embrace seventy varieties of Tulips; they will be supplied by bulb merchants in this country, through the Horticultural Trades Association, and the cost will be borne equally by the Office of Works and the Empire Marketing Board. It will be remembered that some 50,000 Dutch bulbs were planted in Hyde Park last year, these being received as a gift from the Dutch growers, and that strong comments were made in horticultural trade circles that they were not obtained from home sources. In the three previous years many thousands of bulbs were presented to the Office of Works by the *Evening News* for planting in Hyde Park.

Westonbirt as a School.—Westonbirt, Tetbury, Gloucestershire, the residence of the late Sir George Holford, was recently offered by auction and withdrawn, as the reserve price was not forthcoming. Negotiations are now progressing for its purchase by the Rev. P. E. Warrington, Vicar of Monkton Combe, Bath, the founder of Stowe School, who proposes to convert it into a high school for girls.

Appointment.—Mr. J. Robbie, Student Gardener, Royal Botanic Gardens, Kew, has been appointed by the Government of the Sudan, Assistant Superintendent of Gardens, Khartoum Province.

Mr. J. M. Bridgeford.—The many friends of Mr. J. M. Bridgeford, Managing Director of Messrs. Watkins and Simpson, will be interested to learn that he has returned from his visit to Canada and the United States, and has greatly enjoyed his tour. He landed at Quebec on July 8 and visited Montreal, Vancouver and Victoria, British Columbia. After a week's stay in Canada, he proceeded to San Francisco, California, where he met Mr. Lester Morse and Mr. Frank G. Cuthbertson, son of Mr. William Cuthbertson, who accompnied him on a long visit to Messrs. C. C. Morse and Co.'s seed farms at Selinas. Mr. Bridgeford next visited some of the great southern Californian seed farms, including those of the Waller-Franklin Co. at Guadelupe, the Bodger Seed Farm at Lompoc, the Floradale Farms of Messrs. W. Atlee Burpee and Co., at Lompoc, and Messrs. John Bodger's Sons Co.'s seed farms at Los Angeles. While in British Columbia Mr. Bridgeford met Mr. Bennett of Victoria and passed a very interesting time inspecting his extensive collection of alpines. Mr. Bennett is collecting, on behalf of the Royal Horticultural Society, some of the native alpines with a view to introducing them to Wisley. In southern California, Mr. Bridgeford met Mr. O'Melveny, a very enthusiastic amateur gardener who owns a large ranch near Los Angeles, and Mr. Bridgeford has brought home seeds of many interesting Californian alpines from the neighbouring mountains. Another interesting visit was made to the ranch of Mrs. Bryant, an enthusiastic amateur, who is planting as many of the native trees and plants as she can obtain, on her extensive estate, and she is erecting an herbarium in which dried specimens of the plants she is growing will be exhibited.

Appointments for the Ensuing Week.—Sunday, September 4: Wakefield and North of England Tulip Society's meeting. Monday, September 5: Romsey Gardeners' Association's meeting. Tuesday, September 6: Royal Caledonian Horticultural Society's meeting. Wednesday, September 7: Glasgow and West of Scotland Horticultural Society's show (two days); Nottingham and Notts. Chrysanthemum Society's meeting; Cardiff and County Horticultural Society's show (two days). Friday, September 9: National Rose Society's show (two days); Dalry (Ayrshire) Flower Show; Royal Horticultural Society of Ireland meeting. Saturday, September 10: Société Royale d'Horticulture et d'Agriculture de Bruxelles (nine days); Avonbridge Flower Show; Barrhead and District Flower Show.

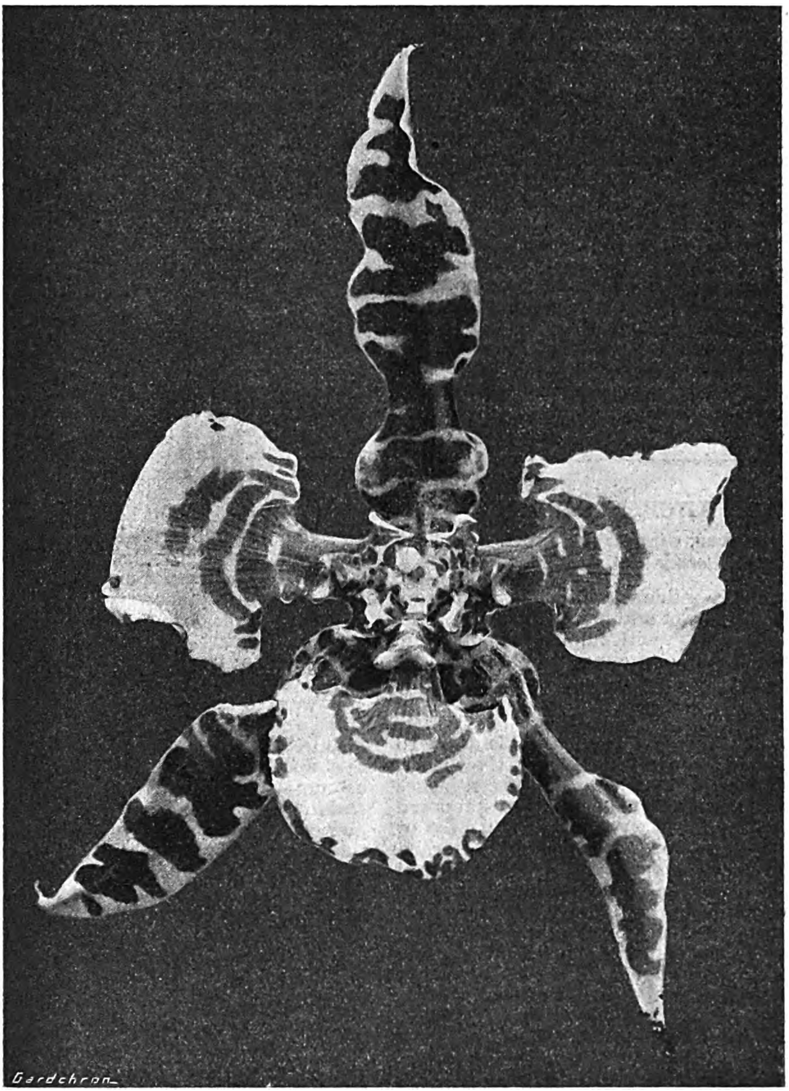

FIG. 69.—ODONTOGLOSSUM GRANDE VAR. ODDITY.

R.H.S. Award of Merit, August 16. Flowers pale yellow and brown. Shown by Messrs. Sanders (not Messrs. Stuart Low and Co. as stated on p. 157).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Wool from the Vegetable Kingdom.*—Two very extraordinary applications of Fir tree leaves to useful purposes have been made in a domain called the "Prairie of Humboldt," near Breslau, in Silesia. One consists in the extraction from them of a fibrous material which has been termed "vegetable wool," the other in the establishment of medicinal baths with the refuse balsamic fluid, liberated in the course of the former manufacture. The establishment of both these manufactures originates with M. de Pannewitz, the inventor of a process for converting the fibrous matter of Pine leaves into textile threads. The Pinus sylvestris, or wild Pine, is the species which, in the case under notice, yields the fibrous material, but every member of the Pine and Fir tribes may, it would appear, be turned to similar account. The leaves of these trees consist of a woolly or cottony matter, agglutinated together by means of a resinous substance. The latter, by chemical solvents, may easily be removed, leaving the woolly matter free, and when removed may be turned to good account as the basis of a medicinal bath. The vegetable wool thus produced is woven into counterpanes, blankets and other similar articles. It has been used for a considerable period in many of the charitable institutions of Vienna, and is much approved of. Amongst other advantages, textures of this substance possess the excellent quality of banishing all manner of insects, which are driven away by a certain odour, not at all disagreeable, which the fibre never loses. *Gardeners' Chronicle, August* 28, 1852.

Publications Received.—*Modern Bee-keeping*, by Herbert Mace; The Publisher, Station Road, Harlow, Essex; price 5/- net.—*Income Tax Up-to-date*, by H. J. Gully; Revised Edition; The *Financial News*, 111, Queen Victoria Street, E.C.4; price 9d.—*How to Photograph Flowers and Gardens*, by J. A. Williams, The Fountain Press, Ltd., 14, Clifford's Inn, Fleet Street, E.C.4; price 1/- net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon, Bletchley Park, Bletchley, Bucks.

Albino Cypripediums.—The albino Cypripediums include C. Curtisii Sanderae, C. Lawrenceanum Hyeanum, C. callosum Sanderae, C. Maudiae, and hybrids between these varieties, the plants usually flowering during the late spring and early summer. They are attractive and useful Orchids that need the heat of the warmest division and a position where they can be shaded from strong sunshine. If the plants have passed out of bloom examine them with a view to providing new rooting material for those that require it. These Cypripediums thrive best when grown in the old peat and moss compost, but as the former is difficult to obtain, it is advisable to add some A.1. Fibre to make it durable. Plenty of drainage is necessary, as much soil about their roots is undesirable, and every endeavour should be made to keep the compost sweet and open. All through the growing season the roots of these tessellated-leaved Cypripediums should be watered freely and a humid atmosphere maintained around them at all times. Light sprayings overhead with soft, tepid water, when the weather is favourable, are very beneficial and help to keep the foliage free from thrip.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Peas.—Should mildew appear on this crop, as it often will on wet and heavy land, spray the haulm every ten days with sulphide of potassium at the strength of one ounce to three gallons of water. Apply the fungicide during the evening.

Onions.—The present is a suitable time to sow Onions in the open to withstand the winter. Sow the seeds in drills made from fifteen inches to eighteen inches apart on rich, well-prepared ground, such as has been cropped with Peas or Potatos. A little bone-meal should be forked in the soil when preparing it, and a liberal dressing of burnt garden refuse and a little soot raked well below the surface before making the bed solid. The crop from this sowing will prove very useful next season about the time when the supply of old bulbs is becoming exhausted. Good varieties for present sowing are Premier, Ailsa Craig, Cranston's Excelsior, Carter's Record, Giant Rocca, Lisbon, and the Tripoli section. Choose a fairly open situation, and so soon as the seedlings are through the soil, stir the soil between the rows with the Dutch hoe and again on frequent occasions throughout the growing season. This crop is rarely attacked by the Onion fly, and may be relied on to give good results.

Cauliflowers.—A sowing of Cauliflower seed should be made about now, either in the open ground on a border or in a cold frame. So soon as the little plants are strong enough, prick them out on a very sheltered border, where they may be protected in very severe weather or, better still, in a cold frame, where they can be protected with ease. Keep the frames well aired so that the plants may grow very sturdily; some of them may be planted in their permanent positions about mid-March, according to the season. Never allow the plants to become drawn or they will be too enfeebled to withstand the rigours of the cold and changeable weather which generally prevails in early spring. Where frame space can be spared some of the strongest plants should be put direct in them, at a suitable distance apart; these will not need transplanting again, and will naturally give the earliest heads. I find that if a little fire-heat is given this crop when necessary a very early supply can be obtained; but do not allow the plants to be coddled at any time. Varieties suitable for this purpose are First Crop, Magnum Bonum and Early London; the last is the hardiest, though the growth is, perhaps, not quite so compact as that of the first named varieties.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Violets.—Violets that are being grown out-of-doors for flowering in frames during the autumn and spring months have this year made very satisfactory growth. Remove all the runners as they appear so that the crowns may receive every encouragement to become strong and well-ripened. A light dusting of soot occasionally will be found very beneficial, and if the weather becomes dry the plants should be sprayed during the evening, taking care that the moisture reaches the undersides of the leaves. Red spider is very partial to Violets, and unless some means are taken to keep this pest in check, good results cannot be obtained.

Bush Chrysanthemums.—These plants have well filled their pots with roots, and to keep them in a healthy condition they will require some manurial assistance. Liquid manure from stables or cowsheds is an excellent stimulant to commence with; this, alternated with soot-water, and a little later with a concentrated Chrysanthemum manure, will keep the plants in a healthy condition. Much will depend on the weather; should it be wet and dull care must be taken not to overfeed the plants or they will make soft, sappy growths, which neither produce flowers in quantity nor of quality. It often happens during showery weather that these plants are overlooked with regards to watering, and it is during these times that great care is necessary to ascertain the requirements of the roots. Plants that have produced good leaves will ward off much rain, and often the roots will be found to be quite dry. Mildew will be a source of trouble and must be checked on its first appearance, otherwise the plants will soon be defoliated, the flowers poor in quality, and fail to keep when cut. Attend to the staking and tying of the young growths to prevent them being broken by high winds. Plants intended to produce large blooms will need frequent attention with regards to feeding the roots and tying the growths. In feeding the roots the grower must be guided by the weather and the growth of the individual plant.

Hippeastrums.—The earliest batch of Hippeastrums have completed their growth and water should be withheld gradually from the roots. Expose the bulbs fully to the sunshine to ripen them thoroughly. At this date the plants may receive much cooler treatment and be given an abundance of air whenever the outside conditions are favourable. Seedlings should not be dried off but kept growing in a moderate temperature through the winter.

Adiantum cuneatum.—Where Maidenhair Ferns have been kept growing steadily during the latter months they should be given plenty of room to develop their fronds. When in full growth this Fern needs an abundance of moisture at the roots and frequent applications of liquid manure and soot-water. As the plants are grown under cool conditions, watering the roots and the damping of the floor, etc., must not be done late in the day, otherwise moisture may be deposited on the plants in the form of dew in the morning. A little top ventilation, both night and day, will prevent this. Grown under these conditions fronds will be obtained that will last well when the plants are used for decorative purposes as well as when cut to supply decorative foliage.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Strawberry Plants.—Young layers in small pots intended for planting in well prepared beds for fruiting next year have filled their pots with roots, and should be set out so soon as possible in order that they may become well-established by the end of the growing season. If the soil was prepared for their reception some time ago, it will have settled down and be firm enough for planting, but where this has not been done, choose a piece of ground that is in good heart and requires but little preparation. The soil for these plants should be moderately firm, well-drained and not too heavily enriched with manure which would favour coarse, soft growth. Set out the plants in rows two feet apart each way, and make the soil quite firm about the roots as the work of planting is proceeded with. If several varieties are grown to ensure an unbroken supply of berries over a long period, plant the earliest sorts on one side of the bed and the others in their order of ripening, finishing with the very latest on the opposite side. After the planting is completed rake over the soil between the rows and if the land is light in texture apply a mulch of suitable material. If the plants have not been specially prepared in small pots for planting runners may be lifted from the old beds with a trowel, with good balls of soil and roots, and be planted either singly or in triangular fashion, allowing a space of four inches between each of the three plants thus set out. For this purpose the best of the well-rooted runners should be used, and with suitable weather the plants should grow freely and develop good, sturdy crowns by the end of the present season. Pinch out all runners so soon as they develop to direct the energies of the plant into the development of sturdy crowns. Keep the bed clear of weeds.

Peaches.—Examine the trees of late Peaches and Nectarines and expose the individual fruits as much as possible to the sun. Varieties that ripen at the end of September and early in October are always useful and much appreciated for dessert purposes. A little extra attention given the fruits will well repay the cultivator. Keep a watchful eye for earwigs; these pests are very numerous in some gardens, and destroy many of the best Peaches and Nectarines. They may be trapped in hollow Bean stalks cut into lengths of eight inches and placed behind the branches of the trees here and there. The canes should be repeatedly examined and the insects either blown or shaken into a pail containing paraffin emulsion or some other insecticide sufficiently strong to kill them.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Orchard House Trees.—Early fruits in the orchard house will be over, but those of midseason sorts will be ready for use and very late ones swelling freely. The management of the trees until the house is cleared includes liberal ventilation, syringing on fine mornings with soft water, and watering the roots carefully, using clear water in the case of trees with fruits ripening, and the later ones with liquid manure and other liquid stimulants. Early Pears and Plums, as in the case of early Peaches, should now be watered with clear water, but the later sorts should be given slight stimulants, both in liquid and solid form, the latter as top-dressings, as often as is necessary. If well cropped, the trees will not be making much growth, but laterals and sub-laterals should be kept pinched to allow light and air to enter the trees and also to cause the flower buds, which should be ripe by the end of September, to gain strength. When the fruits approach ripeness they cannot be handled too carefully, as the slightest pressure produces a bruise, fermentation follows, and the flavour is destroyed. Each fruit should be gathered before there is any danger of it dropping;

numbers of good growers do not pay nearly sufficient attention to gathering and packing their fruits; they need to be uniformly firm and solid in the box to travel safely.

Pot Fruit Trees.—The potting of fruit trees being now well understood, I need not give details, but would emphasize the great importance of the balls of soil and roots being thoroughly moist before the plants are turned out of the pots. September potted trees should have one good watering and be syringed lightly to keep the foliage fresh until all the flower buds are mature. If maiden trees in eight-inch or nine-inch pots have not been repotted they should be transferred to receptacles two inches larger so soon as the flower buds are well set. Old trees which may require reducing should also be attended to. Pick out a quantity of the exhausted soil with a pointed stick, shorten the strongest roots and transfer them to a dry pot of a similar size. Use the compost in a fairly dry state, working the tree up and down to keep the roots well apart from each other, and finally make the soil thoroughly firm by ramming. Early Plums and Pears may require larger pots, but of two evils it is better to have medium-sized pots full of roots than large ones containing compost which is not occupied by the roots. Cherries set their fruits best when the roots are pot-bound and the fruit will be of splendid quality provided the trees are top-dressed and fed properly throughout their growing season.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Plants for Summer Bedding.—Foliage plants used for sub-tropical bedding or for giving relief to beds of flowering plants should be raised from seeds sown sometime during September. I refer to such subjects as Grevillea robusta, Jacaranda, Eucalyptus, Centaurea candidissima and C. Clementei. The sowing of the stronger and quick-growing C. gymnocarpa may be deferred until early in the new year. If required for bedding purposes, Humea elegans should now be raised from seed. Begonia semperflorens, of which there are many fine varieties, is an ideal plant for summer bedding and deserves to be more generally used for this purpose, for the plant is more or less indifferent to weather conditions, thriving equally well during hot, dry weather as in wet, sunless summers. Some cultivators sow the seeds now to obtain large plants for placing out-of-doors next season. While this may be necessary in the colder parts of the country, it is unnecessary in the south, where excellent stock may be raised from a sowing made during January. If the seeds are obtained from a good source the different varieties come practically true to type. These Begonias may also be increased from cuttings rooted early in the year, but this method entails wintering stock plants. When propagating by this method care should be taken to select young shoots from the base of the plant, as flowering shoots, although they will root, seldom break into growth.

Permanent Beds of Hardy Plants.—Wherever possible, beds of hardy herbaceous plants should take the place of the usual summer bedding subjects; such plants are specially suitable for furnishing large, isolated lawn beds, and now that they are in flower is a good time to take note of any that is likely to suit one's purpose and conditions. The following are useful for the purpose, viz., Salvia nemorosa and Eryngium planum, the latter interplanted with Campanula persicifolia to which it forms a succession. By planting two subjects in the same bed, a good deal may be done towards maintaining a long flowering period; thus, many bulbous plants may be used for giving a display during the spring. Narcissi, for example, may be planted in beds of Paeonies, their flowers showing well against the brightly-coloured young shoots of the Paeonies. Gladiolus in many varieties or Hyacinthus candicans may also be used in similar beds to give a late display. Other plants that may be effectively used are Helenium autumnale var. pumilum, H. Crimson Beauty, Bocconia cordata, Achillea filipendulina, Erigeron Merstham Glory and E. Quakeress, Veronica subsessilis, Geum Mrs. Bradshaw, Catananche caerulea, Poterium obtusatum, Monarda didyma (in a cool, moist position), and Helianthus rigidus var. Miss Mellish. Hollyhocks and Michaelmas Daisies are also useful, especially where large beds are required. Some of the strong-growing, free-flowering Kniphofias are also suited to this purpose. Many of the plants mentioned are also suitable for planting in large, informal drifts in the semi-wild parts of the garden.

Propagation of Bedding Plants.—This work should be commenced forthwith; in the case of some subjects, such as Pelargoniums, it is wise to propagate the quantity required at this time, so that any losses that may occur during the winter may be made good by rooting the tops of the rooted cuttings early in the new year. In the case of many soft, quick-growing plants, it is only necessary at this time to propagate the required number of stock plants to carry over the winter. Where large plants of Heliotrope and Fuchsias are required, the desired number should be rooted this month and the plants grown steadily on throughout the winter. Cuttings of Violas, Pentstemons and Calceolarias should be inserted in beds of sandy soil in cold frames.

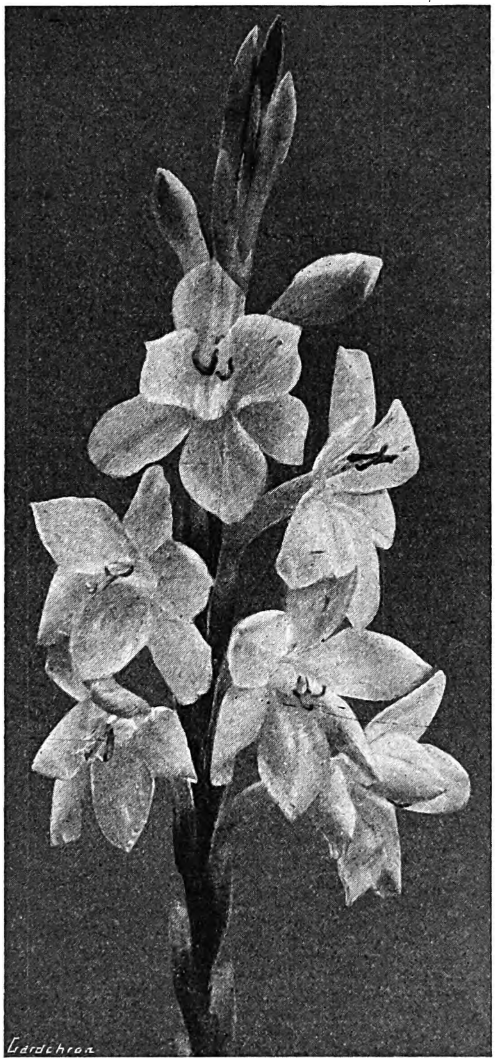

FIG. 70.—WATSONIA ORANGE BEAUTY.

R.H.S. Award of Merit, August 16. Flowers pale orange. Shown by Lady Aberconway and the Hon. H. D. McLaren, Bodnant. (see p. 157).

Hardy Annuals.—Where conditions permit of the plants wintering safely, hardy annuals are best sown during the autumn, for apart from the fact that they give an early display, they are nearly always better than when spring-sown. While some of them are hardy under almost any circumstances, many of them suffer during the winter in cold, wet, heavy soils, and in low-lying situations; generally, they are a success in light, warm, well-drained soils. It is important to make the ground firm as this favours the development of strong, stocky, sturdy growth. Thin sowings and early thinning are also of great importance; probably more annuals are spoiled by overcrowding than from any other cause. All the hardy annuals may be expected to succeed from autumn sowings.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Bulbs for Forcing.—The potting or boxing of bulbs which are required to flower at Christmas should be attended to so soon as they are received from the bulb merchant. A rich compost of loam, leaf-mould and sand should be used, and ample drainage must be provided so that when the pots or boxes are plunged in sand or ashes there will be no danger of them becoming water-logged and the soil turning sour. To secure good pots of either Roman or Miniature Hyacinths with the plants flowering simultaneously, the boxing method is the best, as when the time arrives to remove them from the plunging materials, it will be easy to see which bulbs should be placed in the same receptacle to make up a well furnished pot. The plants may be lifted from the boxes without undue disturbance, and they will soon grow into good specimens. The later ones from the same box may be treated likewise to form a succession. In choosing a site for the plunging bed preference should be given to a cool, shady place, where the roots will develop more freely than in a hot, dry situation.

Cuttings.—In order to secure good plants for another season, cuttings of many half-hardy subjects, such as Heliotropes and Fuchsias, should be inserted now. Make the cuttings from short-jointed shoots, place them singly in small pots filled with a sandy compost, keep them shaded carefully for a fortnight, and they will soon strike and may later be placed in larger pots as found necessary. Where Pelargoniums are largely employed for summer bedding, the propagation of these plants should be commenced now. Go carefully over the beds and remove some of the side-shoots for making cuttings; these shoots will not be greatly missed and the plants will give a display for another month. Pelargonium cuttings inserted now should not be watered in, as they are inclined to damp off if made wet; if the cuttings are sappy they may be allowed to lie exposed to the air for twenty-four hours after they are made, to dry them up. Viola cuttings rooted at this time in portable frames may have the frames removed from them later; the frames will be available for other plants needing protection.

Lawns and Sport Grounds.—Where grass has been worn by much traffic or play, the first opportunity should be taken during showery weather to apply a top-dressing of some quick-acting fertiliser, such as sulphate of ammonia, at the rate of from one to two ounces per square yard. Make sure that the fertiliser is well washed down to the roots of the grass before using the lawn-mower or roller again. Bowling greens should be kept free from Clover and other broad-leaved weeds by the frequent use of sulphate of ammonia, but where the Clover is very plentiful the green should be scythed evenly and carefully before applying the fertiliser. This operation of scything is best performed in the early morning while the dew is on the grass, and great care is necessary to avoid ribbing the turf. Worms are often very troublesome on bowling greens during the autumn and should be destroyed by a worm-killing powder or liquid at the strength recommended by the makers. These wormkillers are usually composed of corrosive sublimate in solution with other chemicals, and while ridding the lawn of worms, have a beneficial effect on the grass if used according to the directions given by the makers.

TREES AND SHRUBS.

CLETHRA.

The Pepperbush, Clethra alnifolia, is one of the most common as well as the most sweetly-scented of shrubs. Mr. E. H. Wilson states, in the *Bulletin* of the Arnold Arboretum, that it is abundant in swamps, woodlands and moist places from Maine to Florida; its blossoms fill the air with fragrance in late July and August. Unfortunately, the leaves are too often disfigured by attacks of red spider, but this year the bushes in the Arnold Arboretum are clean and healthy.

A second species, known as C. tomentosa, blooms later. Hailing from North Carolina and Florida, this is also quite hardy in the Arboretum and may be distinguished from the common Pepperbush by a covering of white hairs on the lower surface of the leaves.

Another American species is C. acuminata, native of the southern Appalachian Mountains. This is not so attractive in blossom as the species already mentioned, but its polished cinnamon-brown stems make it singularly attractive in the winter season.

The only other species grown in the Arnold Arboretum is the Japanese C. barbinervis. This has spreading inflorescences of pure white, nodding flowers and is the first of the Pepperbushes to bloom. Widespread in Japan, in the Nikko region and elsewhere, it is often a bushy tree thirty feet tall. It is the handsomest of the Clethras hardy in New England.

ACANTHOPANAX RICINIFOLIUS.

Mr. E. H. Wilson considers this one of the noblest trees of the cool, temperate regions. It occurs wild, scattered through moist forests from the extreme south to the limits of northern Japan, but is most abundant in Hokkaido, where it grows to a large size, and specimens eighty feet tall with a trunk from fifteen feet to twenty feet in girth are not rare. In Korea and central and western China it is also a valuable timber tree. In old trees the bark is grey and deeply furrowed, the branches thick and spreading to form a flattened or rounded crown. In young trees the branches are erect-spreading and both they and the trunk are armed with short, scattered, stout spines. The dark green leaves on long stalks are very like those of the Castor-oil plant (Ricinus), hence the specific name. Each branchlet terminates in a broad, flat compound cluster of white flowers which are rapidly followed by small, jet black fruits. The large and handsome palmate leaves give this tree a tropical appearance, yet it is perfectly hardy in the Arnold Arboretum, quick-growing, and thrives in ordinary garden soil but prefers a moist situation. So far as is known, it is not attacked by any insect or disease.

HYPERICUM AUREUM.

At the time of writing (early August) two fine plants of Hypericum aureum are to be seen in bloom in the gardens of the Greystone Estate, New York. The one is in the form of a rather dense bush, about four feet or five feet in height, and planted on the side of a steep bank it forms a pleasing feature, with its deep yellow flowers contrasting well with the glaucous green foliage.

The other specimen is a standard bush, eight feet in height. The head is dense and bushy, and four feet or more in diameter. The flowers are borne in clusters at the termination of each shoot. They are an inch-and-a-half in diameter and sessile. The centre of each flower is occupied by a dense cluster of deep yellow stamens about three-quarters-of-an-inch in diameter.

The flowers are succeeded by a conical fruit half-an-inch in length, and the five, unequal, leaf-like sepals persist at the base. Unless seed is required, it is advisable to remove these fruits as they form, for they are produced in great abundance, and the vigour of the plant is expended on their formation if they are allowed to remain.

The shrub possesses undoubted merits as a garden plant, and it is to be regretted that it is not seen to a greater extent in English gardens. Of its hardiness there can be no question for it withstands the severe winters experienced in this part of the world, and as one of its greatest merits lies in its late flowering, it follows that late frosts would not damage it in Britain. *T. H. Everett, New York, U.S.A.*

FLORISTS' FLOWERS.

EARLY-FLOWERING CHRYSANTHEMUMS.

In spite of the popularity and usefulness of the modern Dahlia, which has undoubtedly become a serious rival to the early-flowering Chrysanthemum, the latter still retains a position of importance, both as a border plant and for cut flower purposes and, although the great beauty of the cut flower in some sections of the Dahlia cannot be gainsaid, it is more difficult to display it in the market in an attractive condition than the Chrysanthemum. Moreover, the Chrysanthemum is a much hardier plant, and is capable of presenting a bright appearance after a few degrees of frost may have put an end to the Dahlia display for the season. Beside being a good bedding plant for producing massive effects, it has also the invaluable quality of lending itself readily to removal for the purpose of filling gaps in the border in late summer and autumn.

The Chrysanthemum, being generally considered very easy to cultivate, is frequently given too little attention, and in consequence indifferent results are often obtained. In common with all other plants, Chrysanthemums amply repay for good cultivation, and if grown in well-prepared ground in an open, sunny position, free from overhanging trees yet protected from high winds, they can hardly fail to give satisfaction.

The early-flowering section now includes so many excellent varieties rivalling in beauty of form and richness of colour those of the mid-season varieties that every taste can be satisfied, and the choice is often a matter of individual preference.

Many of the older varieties retain their popularity, however, and are still largely grown because of their ease of culture, floriferousness and reliability in almost all localities. Polly is a very floriferous variety producing a mass of lovely, deep orange flowers shaded with amber, and its yellow sport, Golden Polly, and deep bronze sport, Abercorn Beauty, are worthy companions. Diana, which is also amongst the first to flower, is of crimson and gold colour, and with its sports Golden Diana and Crimson Diana, make a particularly useful group.

The members of the Masse group are noted for their free-flowering habit, and most of them are popular favourites, although of somewhat heavy character. Improved Masse, with large, rosy-lilac flowers, is distinct, and produces large blooms; John McAlpine has flowers of an attractive shade of silver and amber, and Horace Martin, of pure yellow; Ralph Curtis, a cream variety; George Bowness, crushed Strawberry; and White Masse, are all worth growing. Nina Blick is an excellent variety amongst the first earlies, its bright red colouring flushed with bronze being particularly attractive.

These varieties are usually in flower in August and amongst those which are at their best in September may be mentioned Mrs. J. Fielding, chestnut-red; Normandie, blush-pink, and Bronze Normandie; Lichfield Pink and Lichfield Purple, both producing large flowers; Dick Barnes, rich crimson; Goacher's Crimson, Bronze Goacher, La Pactole, with large bronzy flowers; September White, one of the best of the white sorts; and Almirante, a remarkably fine variety with scarlet and chestnut flowers which may be disbudded if desired.

Single varieties continue to grow in favour, particularly for room and table decorations, and the range of colours amongst these has been considerably widened in recent years. Morning Star, golden amber; Delice, bright pink; Stanley Baldwin, crimson; Shrapnel, terra cotta; Dolly Thorpe, salmon-apricot; Vicar of Shirley, bronze; and Simplicity, white, are all excellent varieties. *A. P. C.*

NEW CARNATIONS.

The following two new Carnations have been registered by the British Carnation Society:—

Apethorpe Citronella, raised by Mr. Charles Garratt, Peterborough; colour, pale yellow.

Lady Daresbury, raised by Messrs. Stuart Low and Co., Bush Hill Park; colour, delicate rosy blush.

The Floral Committee of the National Carnation and Picotee Society (Northern Section) has made the following Awards:—

First-Class Certificate.

Jim Dalton, lavender-mauve self.

Awards of Merit.

Rosie, deep rose-pink fancy.

Eglinton, Vieux-rose fancy, with red-shaded centre. All three varieties were shown by Messrs. Torrance and Hopkins, Busby, Glasgow.

ORCHID NOTES AND GLEANINGS.

A NEW ODONTOGLOSSUM.

We have received from Mr. R. Brooman White, of Arddarroch, a very fine flower of an unnamed Odontoglossum of unrecorded parentage. The flower in question measures four inches from petal tip to petal tip, and three-and-a-half inches from the top of the dorsal sepal to the tip of one of the lower sepals.

The colour is difficult to describe in a way to convey the beauty of the rounded flower. More than two-thirds of each sepal and petal is of a light orange shade, the tint being produced apparently by a base of soft yellow overlaid with pale pink. There is a narrow, irregular margin of blush pink round each sepal, the dorsal sepal having the most regular marginal band. In the petals the body colour is a trifle paler than in the sepals, and the tips of these organs, and the wide margins are of a pale shade of mauve-pink, while there are a few irregular markings at the base.

The lip, one-and-a-half inch long, is very handsome, and is soft yellow over the greater part, but there are blush-white areas on the "shoulders" and the frilled, broad apex is of a similar tint. The lateral margin of the lip is finely toothed and recurved a little. The labellum suggests a little fairy that has been told to stand in the corner for disobedience, with arms folded behind. There are high blush-white shoulders, the yellow-shaded frock with its blush-white basal frill, the wings of the golden crest, and the crest itself, suggesting a loose and elegant neck-tie. The column (the fairy's neck) and its broad cap (the fairy's head) complete this quaint conceit, so if Mr. Brooman White is hunting for a name for this dainty Orchid, we suggest he gives due consideration to "Arddarroch Fairy."

We may add that in general appearance this beautiful and distinct Odontoglossum reminds us somewhat of O. Armstrongiae.

SCUTICARIA.

There are two species of Scuticaria in cultivation, viz., S. Hadwenii and S. Steelii; the former is easily recognised from the latter by its short, terete leaves and growths, eight to nine inches in length, whilst S. Steelii often attains to a length of forty inches or more with stems as thick as an ordinary writing pencil.

S. Hadwenii succeeds in a warm intermediate house, whilst S. Steelii enjoys the heat of the warmest division whilst making its growth.

The plants are best grown on rafts, with very little compost about their roots, and the rooting material should be renewed as it becomes decayed.

Both species should be syringed freely during the growing season. The best time to disturb the plants and afford them new rooting material is when their wiry roots are active.

It is well-known that Orchids with terete, fleshy leaves are much exposed to direct sunlight in their native countries, hence, in glasshouses in this country they should be grown in the lightest position available.

PLATYCLINIS FILIFORMIS.

The elegant Golden Chain Orchid should be repotted, if this is necessary, after its flowering period is over, and so soon as new roots are seen to be pushing from the partly developed growths. It is not a very robust Orchid, therefore no risks should be taken in potting the plants out of the proper season.

P. filiformis is best grown in shallow pans suspended from the roof, in a shady position in a house having a warm, intermediate temperature. When the roots have grown freely in the new material they may be supplied with water whenever the compost becomes dry, and the plants sprayed overhead frequently all through the growing period as a preventive against red spider.

At almost every exhibition held in August Platyclinis filiformis figured in groups of Orchids or other displays and is often seen used in floral designs.

P. glumacea is worth growing for its sweet perfume. P. Cobbiana and P. uncata require similar treatment to that suggested above. *J. T. B.*

INDOOR PLANTS.

RUELLIA MACRANTHA.

This plant is undoubtedly of great value for decorating the greenhouse or conservatory during the winter months. It was introduced from Brazil in 1768, and has been cultivated in most botanic and other gardens of note, ever since, for the beauty of its flowers.

R. macrantha grows about two feet in height, has a bushy habit, and its large, rosy-purple flowers are produced from November to January on terminal and axillary spikes, in such great abundance that the foliage is almost obscured. Fortunately, this plant is not difficult to cultivate. Cuttings should be inserted in a sandy compost in April, and placed in a propagating case over slight bottom-heat. Rooting takes place very rapidly, so that in a few weeks the plants are large enough to be placed in three-inch pots. From these, as they require it, they should be repotted, first into five-inch and finally into seven-inch pots, in which they will flower. A good potting compost consists of two parts loam, one part leaf-mould, and one part well rotted manure, such as is obtained from an old hot-bed.

In the early stages of growth a stove temperature is necessary, but as warm weather approaches the plants should be gradually hardened off, so that by August they may be accommodated in a cold greenhouse, where they will obtain the maximum amount of air and sunlight. They should, however, be returned to the warm house in early autumn.

Given this treatment, Ruellia macrantha will produce well-ripened wood, which is essential for the production of flowers.

To ensure a bushy habit it is necessary to pinch the shoots at three different periods, *i.e.*, immediately after the plants have recovered from each potting. After the plants have flowered the soil should be kept on the dry side for a few weeks, after which they should be restarted into active growth. The old plants may be grown on to form large specimens, or the young shoots may be used to form a new batch of plants. *G. F. Gardiner, Botanic Gardens, University of Bristol.*

LACHENALIAS.

These South African bulbous plants are very effective grown either in pots, pans or baskets. The egg-shaped, Scilla-like bulbs should be potted during August and September. Five inch pots are a convenient size, and from six to ten bulbs may be placed in each pot. The tops of the bulbs should be placed about one inch below the surface.

Excellent results may be obtained by the use of good, turfy loam, without manure or sand. Many growers favour a mixture of loam, leaf-mould and a small quantity of well-rotted manure or bone dust.

Although not quite hardy, the plants may be grown well under quite cool conditions. After potting them they may be placed in a frame or on a greenhouse shelf, and the soil kept moderately moist until the leaves are visible. An important point in after cultivation is to keep the plants well supplied with water.

During the winter a minimum temperature of 40° by night and a maximum of 55° by day suits them. Plenty of air should be admitted but cold draughts must be prevented. When growing freely the plants may be fed with weak liquid manure and receive an occasional top-dressing of an approved fertiliser. Feeding may be continued until the foliage begins to fade when the plants may be returned to a sunny frame and kept dry until the following August.

Lachenalias are very attractive when grown in baskets. The baskets should be lined with good, clean moss and the bulbs inserted as the soil is filled in. *C. Ruse.*

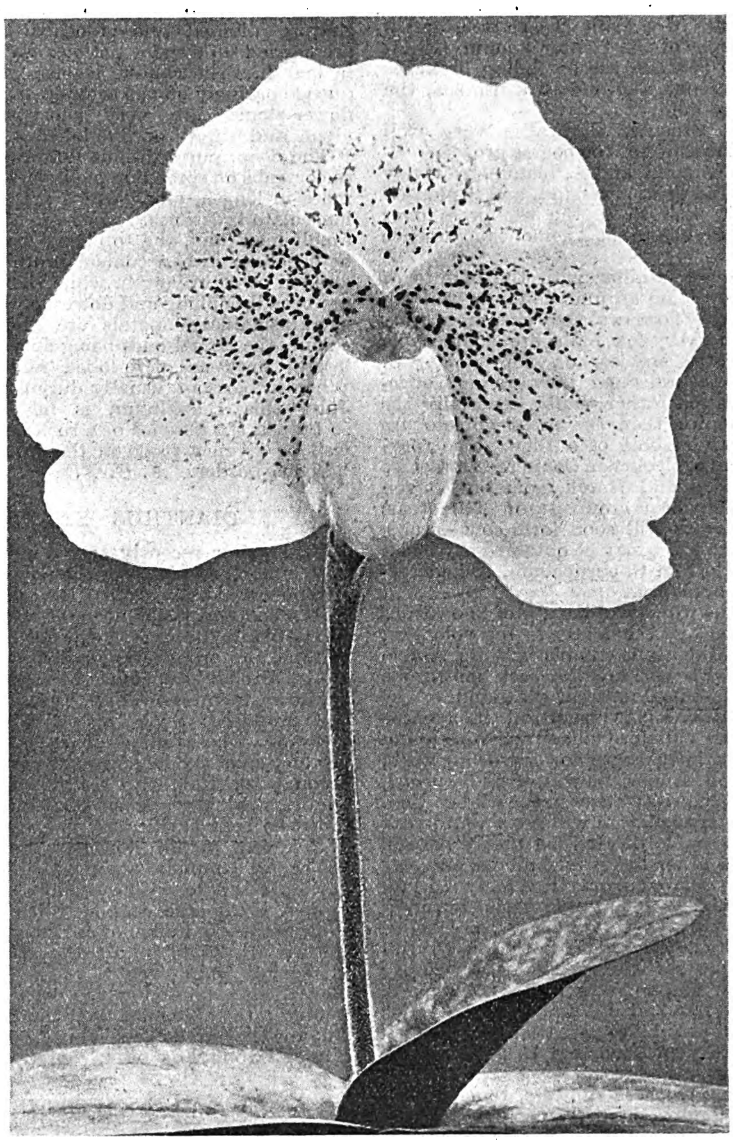

FIG. 71.—CYPRIPEDIUM HIRAETHLYN.

R.H.S. Award of Merit, August 16. Flowers white, dotted with purple. Shown by Lady Aberconway and the Hon. H. D. McLaren, Bodnant. (see p. 157).

BULB GARDEN.

THE NATURALISATION OF BULBS.

Naturalised bulbous plants, in suitable environment, contribute to the most beautiful of spring-garden effects, and at other seasons of the year it is quite possible, by judiciously selecting and planting bulbous subjects, to bring into the garden something of Nature's delightful harmony.

Narcissi are possibly unrivalled for growing in grassland; they are especially beautiful in open parkland, as the flowers sway in harmony with the slightest breeze; in an old orchard they lend their native charm to an already beautiful and very English scene. Daffodils, however, should never be grouped on turf which is mown with a machine, as it is of the utmost importance that the foliage of the bulbs is allowed to ripen thoroughly or decay before it is removed.

September is an ideal month in which to plant the bulbs, and the work may be expeditiously accomplished by the use of a bulb planter or by the homely method of making two cuts with a spade to form a cross, and then by placing the spade under one side to cause the cross-cut to open; if the bulbs are placed within the aperture and the spade withdrawn, the turf resumes its normal position, with the bulbs well covered.

Such well-known varieties of Narcissi as Sir Watkin, Golden Spur, Emperor, Empress, Horsfieldii, poeticus, ornatus and princeps may be naturalised in grass. In a woodland clearing the exquisite little N. cyclamineus will freely naturalise to form a dainty picture, and N. Bulbocodium will revel in moist soil by a streamside, where the summer sun will ripen the bulbs.

Tulips are not grown so successfully in grass as Narcissi, and a careful selection is necessary. The varieties Bouton d'Or, Gesneriana major, Gesneriana lutea, T. macrospila, and the indigenous T. sylvestris are suitable.

Two memories of spring bulbs will ever remain with me—a mass of Crocus Tommasinianus around the base of a giant Beech tree, and a thickly-set carpet of the Winter Aconite (Eranthis hyemalis) beneath the spreading branches of a large Chestnut, the one an azure sea, the other a field of gold.

The Dutch Crocuses naturalise very well if planted in grass of not too coarse growth.

Anemone apennina and A. blanda are lovely in thin woodland or in grassland, and if planted in turf, it is well to scythe the grass over early in the year, before the Anemones commence to grow.

Those who are familiar with the haunts of our native Colchicum autumnale know well the beauty of the rosy flowers as they peep from grass or bracken, and very few bulbs are comparable with this pretty species, or the noble C. speciosum for naturalising; they are most effective when planted rather thinly, especially the larger species, for then the great goblets are proud of port and bold of outline. The rosy-crimson flowers of Cyclamen Coum are attractive during February and March, sometimes even earlier, and a few corms grouped around the stems of deciduous trees will soon form considerable colonies; a like effect may be obtained in August and September from C. europaeum, C. hederaefolium and C. h. album.

To realise the wonderful beauty of Snowdrops they should be massed boldly in big colonies; the common Galanthus nivalis and its double form, also G. Elwesii, are the best Snowdrops for planting in woodland and grassland.

Fritillaria Meleagris is beautiful in grass—near to a North Wiltshire village are to be found acres of this quaintly pretty flower growing wild; the old-world F. Imperialis will, if undisturbed, also contribute a pretty effect in the wild garden. Ornithogalum umbellatum will grow well under trees and is capable of creating pretty effects.

A wealth of other beautiful bulbous subjects includes Muscari conicum Heavenly Blue, a splendid subject for grass; such autumn-flowering Crocuses as C. sativus, C. pulchellus and C. zonatus, the winter-flowering C. Imperati, and the spring-flowering C. susianus; such beautiful Chionodoxas as C. Luciliae, C. L. var. gigantea and C. L. var. sardensis; Leucojum vernum, L. v. carpaticum, and such Liliums as L. pyrenaicum and L. tigrinum for woodland clearings.

Bold massing of these subjects, remote from all formality, and in a purely natural environment, will lend enchantment and bring Nature herself within the garden. *Kiftsgate.*

ARTHROPODIUM CIRRHATUM.

It is interesting to come across an old friend amongst plants occasionally. Arthropodium cirrhatum was grown in the old Chiswick Gardens in the early eighties of last century, and now it has turned up again in the gardens of the Royal Horticultural Society at Wisley. It is a Liliaceous plant, allied to Anthericum and Chlorophytum, having a similar habit of growth, but differs in the filaments having a densely woolly appendage above the middle, which is conspicuous in the open white flowers, nearly an inch in diameter. The appendage is two-lobed at the base, and coiled at the tips of the lobes, after the fashion of a tendril, and this has given rise to the specific name.

The species is the finer of the two that are natives of New Zealand. The plant is also the larger, the flower stem varying from one to three feet in height, and bearing a panicle of flowers, nearly one foot long. It is figured in *The Botanical Magazine,* tab., 2,350. *J. F.*

ALPINE GARDEN.

DELPHINIUM CASHMERIANUM.

Being of dwarf stature and very attractive in bloom, this species might well be given a place on the rock garden in light, rich soil. A native of the Himalayas, where it is to be found growing at an altitude of from 12,000 to 16,000 feet, it is quite hardy and perennial, and although not long lived is readily raised from seeds, which it produces abundantly.

D. cashmerianum forms clusters of orbicular leaves, about three inches in diameter, and palmately five- or seven-lobed, the lobes being sharply divided and toothed. The leaves are carried on slender petioles up to ten inches in length. The cauline leaves, which are produced sparingly on the semi-erect, one-foot-high flower-stems, are very short-petioled, dark green and three- or five-lobed.

The deep, purplish-blue flowers are produced in corymbs on spreading pedicels, three inches or more in length, along which are several small, lanceolate bractioles. They are about one-and-a-half inch long, the top sepal being elongated at the base into a conical protuberance, half-an-inch or so in length, while the lateral sepals are broadly oblong and downy on both surfaces. The insignificant petals are almost black in colour, the dorsal ones being spurred, while the lateral ones are two-lobed and very hairy. When in blossom, usually during late June and July, this Delphinium is highly attractive, so that in the absence of a rock garden it might well be given a place in the front of the herbaceous border. *A. G. F.*

DIANTHUS KNAPPII.

The writer recently saw a number of very healthy looking plants of the now rare Dianthus Knappii, a plant which he grew many years ago from seeds, and which flowered so profusely that all the plants succumbed without forming shoots suitable for propagation and did not produce seeds. Probably, if some of the plants had been cut down before flowering, "grass" would have been produced, which would have served for propagation. These failings of D. Knappii—want of production of shoots and absence of seeds—will account for its rarity nowadays. The many admirers of the genus Dianthus should not forget to bear D. Knappii in mind for the sake of its clear yellow flowers. This is a colour not at all common among the Dianthi. The flowers are borne in close heads, and the plant is not so lanky and tall as some other cluster Pinks for it is only five or six inches high. With the writer, plants from seeds sown under glass in spring were, after being pricked out, planted in a border, which was of light soil, in July; they bloomed well the following year. But for the two defects, already mentioned, D. Knappii would be more favoured with growers.

EPIMEDIUM MUSSCHIANUM.

Several of the Epimediums, or Barrenworts, appear to be gradually dropping out of the lists of nurserymen, and are likely to become difficult to procure from the trade.

This betokens a lack of interest in the genus Epimedium on the part of garden lovers—a lack undeserved by these pretty plants, which, among other good qualities, will thrive and flower in the shade.

Among the members of the genus which I have looked for in vain in catalogues of several of the leading hardy plant dealers is E. Musschianum. It is preferred by some to E. niveum, but the plant I have known for many years as E. Musschianum is dwarfer than E. niveum.

This species is about six inches high, and has the usual delightful foliage of the Barrenworts, with an abundance of clear, white flowers of almost diaphanous texture. Like all other members of the race, it delights in shade, and may even be grown under deciduous trees. If left alone, it will soon spread into generous masses.

This Epimedium will grow well in soil containing a good proportion of leaf-mould. It is charming in spring with its lovely green foliage and white flowers, while in autumn, with suitable weather, the leaves will assume a delightful bronzy hue, and will last a long time for winter decoration. *S. Arnott.*

EPILOBIUM MACROPUS.

Although a native of New Zealand, this Willow Herb is perfectly hardy in this country.

It is a carpeting plant of more than usual merit and should become popular with growers. It has a neat, close habit, bronze foliage and large white flowers rivalling those of Arenaria montana grandiflora in both size and colour. It rarely exceeds two inches in height.

This Epilobium is not particular as to soil or situation, being quite at home in either the crazy path or the alpine house. Propagation is easily effected by seeds or division. *S. R. D.*

THE LITHOSPERMUMS OF THE PYRENEES.

There are three, and even four, interesting Lithospermum species on the Pyrenees, which we found lately, during a trip that began at Bayonne and ended at Perpignan. First of all, L. prostratum was growing as a weed between the Heathers near Bayonne. Next was the most beautiful of all, the splendid L. Gastonii, a Spanish plant which appears here and there on the high cliffs of the central Pyrenees. It grows between 1,400 and 2,000 metres alt., on sunny positions, and always on limestone rocks. It forms big fields of azure which are seen from afar, and are much admired by the inhabitants, who call it "the Blue Flower."

Another beauty is L. oleoides, with silver leaves, pink and azure flowers—a marvel when seen in the high and hard limestone rocks it adorns on the Spanish side of the Pyrenees, where it covers large places on half-shady situations. L. fruticosum is a little shrub (20-25 cm.) with Rosemary-like, hoary leaves, and deep blue, narrow flowers. This species grows on sunny banks and barren places from Prades to Perpignan and thence to Aix-en-Provence. *Henry Correvon, Floraire, Geneva.*

FLOWER GARDEN.

PENTSTEMONS.

The colours of the modern florists' Pentstemons are varied and beautiful and they are most useful and popular plants for summer and early autumn effect. They are of easy culture and do well in the majority of deeply cultivated soils, enriched with well decayed animal manure each year. Although not perfectly hardy, the plants will withstand a certain amount of cold weather and may be planted early in April in most districts with safety. From that time onward the beds or borders cannot be hoed too frequently; this operation will assist root action and promote quick, healthy growth.

If exhibition flower spikes are required allow only three or four strong shoots to mature on each plant and feed the roots occasionally with weak liquid manure. The removal of spikes that have finished flowering enables later shoots to gain strength.

Towards the end of September shoots suitable for propagating will be available. Only strong, healthy shoots, without flower buds, should be chosen, unless the stock is small, for propagating from weak growths usually results in poor plants. A cold frame facing south is an excellent place in which to strike the cuttings, in a fairly rich, sandy compost. The frame should be kept close and moist and shaded lightly if necessary until the cuttings show signs of growing, then sufficient air should be admitted to cause the shoots to grow sturdily. If damping occurs at any time plenty of air should be admitted on fine days and the soil dusted with dry sand.

It is a common complaint of growers in some districts that the large-flowered varieties deteriorate after a few years' cultivation; the plants lose their robust habit and healthy cuttings are more difficult to obtain each year.

When this is the case the plants should be given a change of quarters for one season, preferably in the kitchen garden, the flower buds picked off so soon as they appear, and every effort made by good cultivation to help the plants to regain their former vigour. Cuttings from these plants will be plentiful and healthy and a stock raised from them will be available for planting in the borders the following season. *S. Bowler, Ford Manor Gardens, Lingfield, Surrey.*

HERBACEOUS LOBELIAS.

Already very popular, the herbaceous Lobelias are destined to become even more favoured by growers, and will be a feature of many gardens later. They are a great success in places where moist conditions prevail, for L. cardinalis is a true bog plant, and the other species delight in wet or moist soils; they are beautiful when grown in the stream garden, in the bog or in moist, half-shaded positions in the lower part of the rock garden. Although somewhat foreign to their requirements, L. cardinalis, L. fulgens and the variety Queen Victoria will furnish a summer flower bed in a very telling manner.

In cold districts these Lobelias are not quite hardy, but if the plants are lifted, potted, and placed in a slightly warm house they will pass the winter successfully, or they may be wintered in a cold frame, but I have found a little trouble from them damping in frames, and would recommend the first-named method. Propagation is easily effected by seeds in the case of the species, whilst the hybrid forms may be increased by careful division of the roots in spring. In many favoured places these plants may be treated as hardy subjects, and where this is possible they are an asset to the garden.

L. cardinalis is characterised by green foliage, and has terminal racemes of scarlet flowers, from eighteen inches to two feet in height. The species was introduced from North America so long ago as 1626, and is figured in *Bot. Mag.*, tab. 320.

L. fulgens has attractive bronzy-crimson leaves and terminal racemes of intensely scarlet flowers; the stems are of a reddish colour. Both stems and leaves are slightly downy, and the plant grows about two feet high. It was introduced from Mexico in 1809.

L. syphilitica produces a long, leafy raceme of light blue flowers in late summer and autumn, whereas the foregoing species flower from May to August. The leaves are ovate, acuminate and unequally serrated. The plant ranges from one foot to two feet tall and is hardy in most situations.

L. syphilitica is a North American plant; it was introduced in 1665, and was originally known as L. glandulosa.

L. splendens is a very close ally of L. cardinalis and L. fulgens, which it resembles both in colour and habit. It is a Mexican species and was introduced in 1814.

L. pyramidalis, from Nepaul, produces violet flowers in a panicled, leafy raceme; the stem is pyramidally branched, the leaves lanceolate, acuminate and serrated. It grows about three feet high. This species is fairly hardy; it was introduced in 1882, and is figured in *Bot. Mag.*, t. 2,387.

Other little-known hardy or half-hardy species include L. amoena, with pale blue flowers, introduced from North America in 1812; L. polyphylla, deep purple, introduced from Chili in 1835; L. puberula, blue and white, a native of North America; and L. glandulosa, blue, introduced from the southern United States in 1840.

During recent years many hybrid forms have appeared, and the species and hybrids together constitute some of the most interesting and certainly some of the most intensely brilliant-coloured plants.

Queen Victoria is an old and deservedly popular form of L. fulgens; a selection of modern varieties includes B. Ladhams, vivid crimson; Vesuvius, scarlet; rosea; Rifleman, brilliant scarlet; Purple King; Mrs. Humbert, pink; carmineus; Purple Emperor; Huntsman, red; Firefly; Gloire de St. Anne's and Shirley Beauty.

Syphilitica alba is a white form of the species and should be included in a collection.

These plants, with their very brilliant flowers, are most effective when placed in close proximity to Ferns and similar plants, the fresh green of the one presenting a vivid contrast to the kaleidoscopic colouring of the other. *E.*

HARDY FLOWER BORDER.

POTERIUM OBTUSUM.

A native of Japan, this rather uncommon Burnet (Fig. 72) is a fine summer-flowering subject for the herbaceous border, being of attractive and vigorous habit and very beautiful when in bloom. Forming a bushy plant about three feet in height, it produces numerous pinnate, basal leaves, up to about eighteen inches in length, consisting of six or more pairs of rounded, oblong leaflets which are short-petioled and have regularly toothed margins. The flower stems are erectly-branched, the branches arising from the axils of the leaves, the bases of which are sheathed and furnished with two leaflet-like stipules. The leaves themselves are much smaller than the radical ones, consisting of four or fewer pairs of leaflets, the upper surfaces of which are rich green, while the under ones are much paler. The flowers are produced in nodding, semi-pendulous spikes about three inches long and an inch in diameter, their attractiveness being due to the masses of rich, rose-red stamens, the remaining parts of the flowers being insignificant. *A. G. F.*

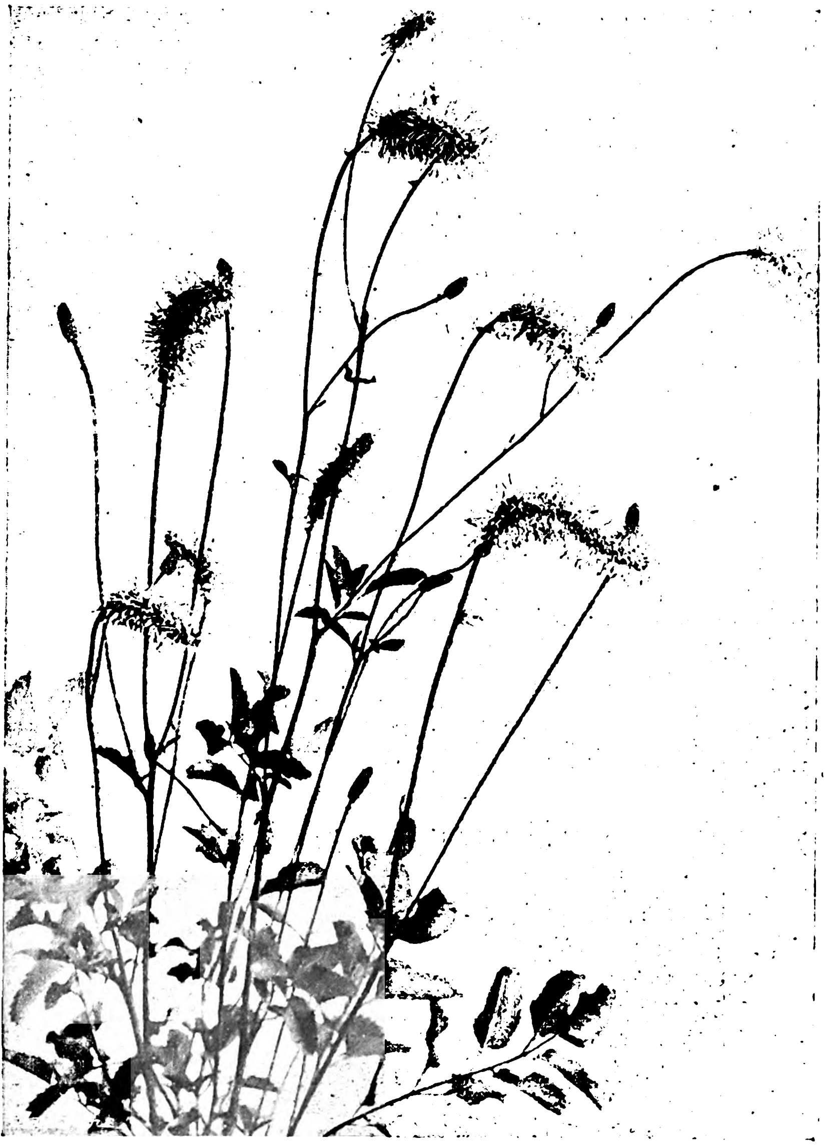

FIG. 72.—POTERIUM OBTUSUM.

PUBLIC PARKS AND GARDENS.

The Sub-Committee of Glasgow Corporation has selected the following "short list" out of ninety-four applications received in connection with the appointment of Assistant Director of Parks:—Mr. James W. Atkinson, Chief Assistant Parks Department, Blackpool; Mr. W. J. Hepburn, Superintendent, Greenwich Park; Mr. W. Lambton, general foreman, John Innes Horticultural Institute, Merton; Mr. Leslie Morgan, General Assistant of Parks, Manchester; Mr. George E. Roden, Superintendent of Parks, Folkestone; and Mr. W. A. Watson, Assistant Superintendent, Roe Lee Park, Blackburn. When the recommendations came before the Parks Committee, a motion to refer the list back to the special committee in order that four additional applicants from the staff of the Corporations Parks Department be included, was defeated by ten votes to seven.

Church Stretton Urban District Council has decided to accept the offer of Mr. Samuel Brewis, of Tiger Hall, to present to the Council about thirty-five acres of Spring Bank Farm as an open space for the public for all time.

The Warblington Urban District Council has under consideration the question of carrying out the further development of the recreation ground at Emsworth at an estimated cost of between £200 and £250.

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NOTES FROM GLASNEVIN.

THE advent of August brings a very definite feeling of autumn, and a corresponding change in the look of the garden. Already autumn tints are making their appearance, Berberis Thunbergii is crimson, and certain fruits are becoming prominent, though not yet highly coloured. Shrubs in flower are not numerous, but conspicuous on sunny walls is Pentstemon cordifolius, a truly charming plant, apparently quite hardy where well exposed to the sun. Hypericums are extremely useful at this season, the best of them including H. patulum, H. p. Henryi and H. Hookerianum Leschenaultii; the last distinct from all others in its long, strong shoots bearing glaucous leaves and very large, rich yellow flowers. It must be propagated from cuttings as seedlings revert to a green-leaved form with smaller flowers. There is some doubt about the true identity of this shrub and it is at present being investigated. Hypericum chinense is conspicuous in a sunny border sheltered by a greenhouse, and although not as hardy as many other species, it is well worth a warm corner for the sake of its bright yellow flowers in autumn.

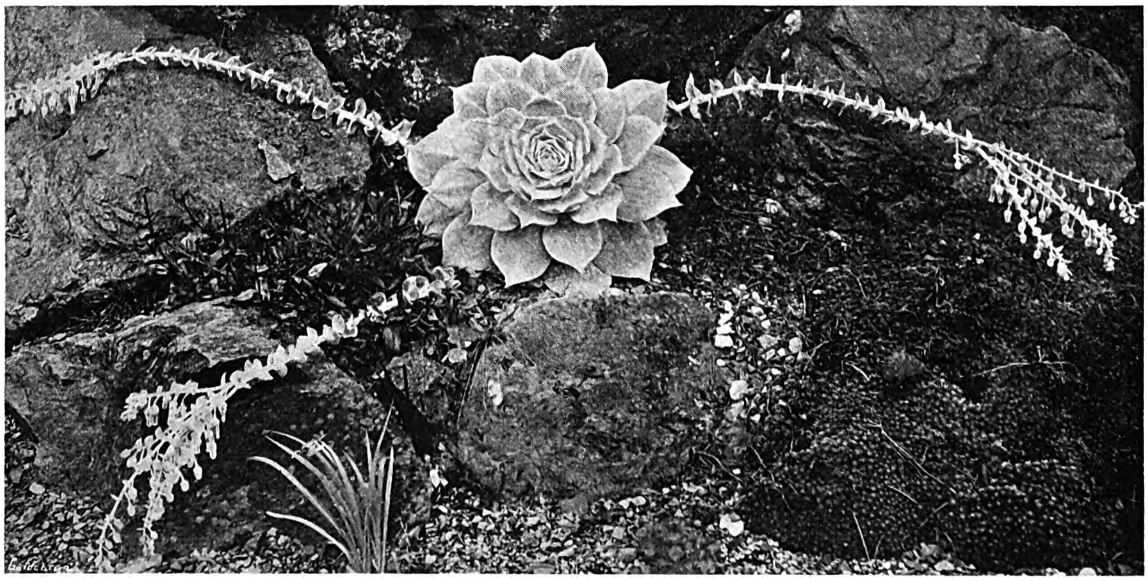

FIG. 74.—DUDLEYA PULVERULENTA.

A very charming foliage plant is Artemisia arborescens, with finely-divided leaves of silvery-grey. A rather pretty effect is seen in front of the long range of conservatories here at present, where a clump of a strong-growing variety of Agapanthus umbellatus has pushed its umbels of blue flowers up behind the Artemisia, the blue and silver making a beautiful combination. Near-by, a clump of Phygelius capensis coccineus is flowering freely, a great improvement on the older form, and a charming display is made by Lobelia laxiflora (Cavanillesii), with brilliant red and yellow flowers; its roots are growing between the stones of the conservatory where they are protected from frost in winter.

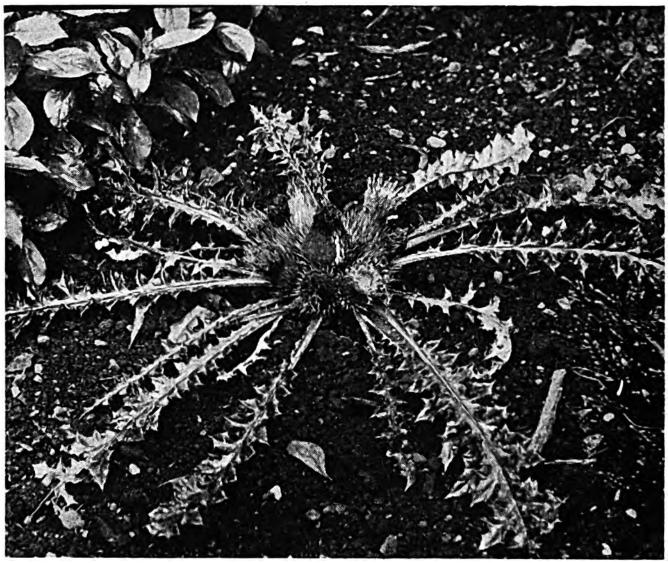

FIG. 73.—CARDUUS EUOSMUS.

Many fine shrubby Veronicas are flowering now, but their specific identity is uncertain, they are of the speciosa type, including the red-flowered varieties, Gauntlettii and La Seduisante, the deep blue-flowered Veitchii, and several others of the same habit, but with flowers of mauve or pale blue, making an interesting and beautiful series, not, however, to be relied on as quite hardy. Hardier and flowering freely is V. angustifolia, with narrow, linear leaves and numerous racemes of white flowers; this is a handsome shrub of which there are examples five feet to six feet high and as much through in this neighbourhood.

The two fine, sub-shrubby Poppyworts, Romneya Coulteri and R. trichocalyx, are in good condition now, bearing abundant large, white flowers. Although inclined to be invasive when well established, a place can usually be found for them where they cannot overwhelm less vigorous plants. It is somewhat remarkable considering the abnormally cold weather experienced up to the end of June how well Californian plants have flowered. Never have we had a finer display of flowers on Fremontia californica and Carpenteria californica that during the last month. Of the latter there are two distinct forms here, one with narrow leaves and small flowers, the other with shorter, thicker, dark green leaves, and large pure white flowers. I was inclined to think the narrow-leaved form the freer-flowering, but this year I could find no difference in that respect.

Herbaceous plants have developed apace during the last few weeks, and nowhere are they finer than in the moist ground near the pond and river. Very conspicuous are several species of Senecio, notably S. Veitchianus and S. Wilsonianus, with tall spikes of golden-yellow flower heads; S. stenocephalus, with slender spikes of smaller heads; and S. clivorum, with corymbs of deep yellow heads. The tall, spicate species are remarkably effective, standing well up among other vegetation. Here, too, Thalictrum Delavayi thrives, the tall sprays of violet-coloured flowers standing well above the Fern-like foliage. Astilbes continue to make a good display, flourishing in the rich, moist soil, and varying considerably in colour and time of flowering; among the most attractive are the hybrids of Astilbe simplicifolia, intermediate in height and bearing numerous panicles of pink flowers.

The rock garden still shows a fair amount of colour, the more striking groups being Platycodon grandiflorum, in pale and deep blue, and various species of Oenothera, particularly O. caespitosa, with white flowers, O. missouriensis, yellow, and a remarkably handsome plant acquired from Mr. Carl Purdy as "Burbank's America," which has large flowers opening pure white and fading to pink, stems sprawling and bearing very finely divided leaves. This, probably a hybrid of O. acaulis, is quite a striking plant, continuing to bloom for several weeks, many flowers remaining open during the day.

Carduus euosmus (Fig. 73), a Chinese, stemless Thistle, described in *Notes from the Edinburgh Botanic Garden*, 1917, p. 17, is of more than passing interest. The leaves form a rosette and are dark green above, white tomentose below, pinnatifid, with spinous margins. The yellow flower heads are produced in the centre of the rosette, one large central one surrounded by seven to eight slightly smaller heads. The involucre bracts are narrowly lanceolate, with long, sharp, stiff points; it is an interesting and remarkable plant. *J. W. Besant.*

Dudleya pulverulenta (Fig. 74) is striking, forming a large rosette of thick, glaucous leaves, after the manner of the Cotyledons. It has lived in the rock garden for five or six years with no protection other than a sheet of glass over it in winter. This year, for the first time, it has produced three long flower stems from the axils of the lower leaves; each stem is thickly furnished with fleshy leaves, and is terminated by a racemose panicle of comparatively large flowers of a dull, glaucous hue, the segments of the corolla tinged with dull red. This plant comes near to Cotyledon pulverulenta of Saunders' *Refugium Botanicum*, t. 66, but differs from that figure in the more abruptly acuminate basal leaves, the less acuminate stem leaves, and in the colour of the corolla.

NOTES FROM WISLEY.

In many gardens Gladioli are merely planted in small groups with the object of brightening the herbaceous border at a rather awkward time, and it is seldom that one sees a whole bed or border entirely devoted to these striking flowers. A good idea of their effectiveness in a mass, however, can be obtained from the trial of Gladioli at Wisley, which is now almost at its best, and which contains both large-flowered and primulinus varieties. The majority of the latter are classed as primulinus grandiflorus, and it would appear that the grace which has hitherto characterised the primulinus type is being lost in the pursuit of large blooms.

One of the most handsome of these which belong to the large-flowered section is Albatross, with large, white blooms. Good spikes are also to be seen in the case of White Giant and L'Immaculée. Thomas Edison is a showy variety with salmon flowers, while Taro is no less conspicuous with its white-throated blooms of bright carmine. Attractive, yellow-flowered Gladioli are Cecilia and Golden Measure, the latter being later flowering than any of the foregoing varieties.

In the primulinus grandiflorus section, Ethelyn stands out by reason of its particularly tall, slender, arching spikes, which are yellow, suffused with apricot, while among those of stockier habit, Alice Tiplady, with handsome, orange-salmon flowers, is well worthy of note.

In addition to Gladioli, large numbers of herbaceous Phloxes are now in full bloom in the new flower-trial quarters, and varieties such as Gen. von. Heutz, September Glow, Splendour, and the white-flowered Phyllis, are a few of the many which are blooming well.

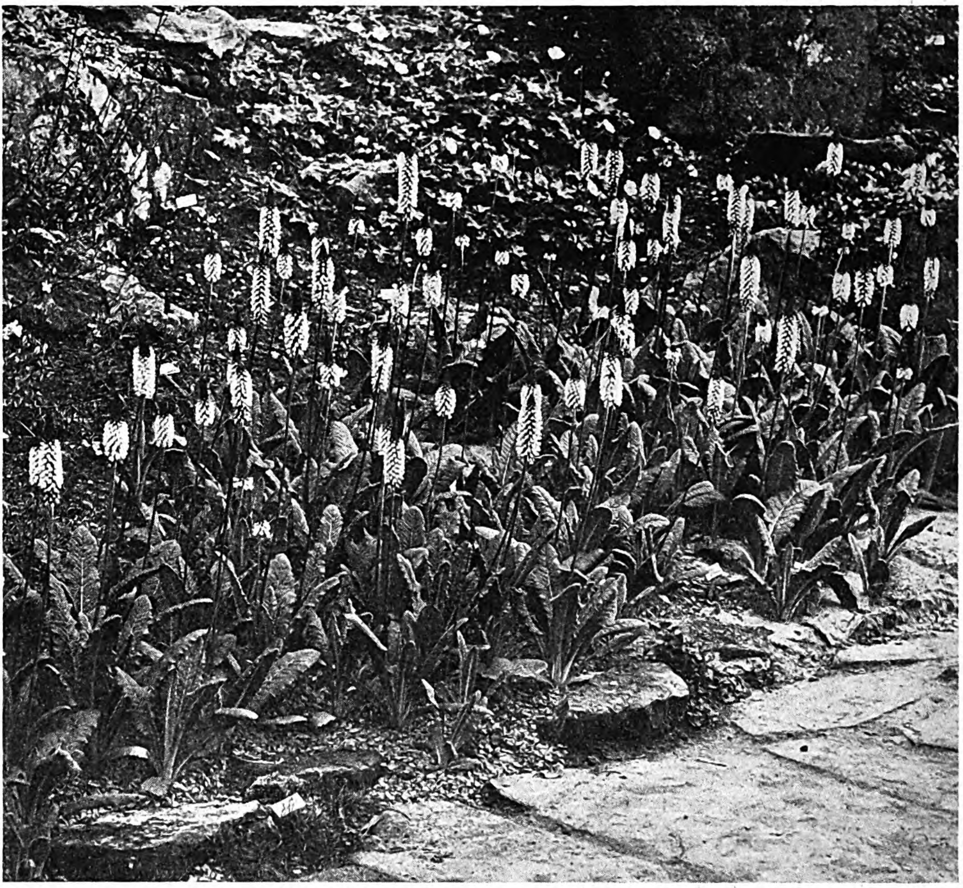

FIG. 75.—PRIMULA LITTONIANA AT WISLEY.

Dahlias are now beginning to attract attention, and many of the single, Mignon sorts are already covered with bloom. One of the best is the yellow-flowered H. J. Jones, which is in flower with Pembroke, another free-flowering Mignon. The flowers of the latter, however, are much paler, and show a faint rim of red around the petals. Histon Gem, scarlet, and Paisley Gem, with orange-scarlet flowers, are also making a bright show, and a free-flowering crimson Mignon is seen in Ruby. Rather similar but with larger and fewer flowers is Coltness Purple.

Many of the Roses in the Rose border are now producing their second crop, one of the most forward being Betty Uprichard, a Rose which has flowered remarkably well this year at Wisley. One's enjoyment of the Roses, however, is somewhat spoiled by the unpleasant smell of sulphur with which the plants have been treated in order to check mildew.

In the rock garden Gentiana lagodechiana is blooming remarkably well, and a few blooms are showing on Gentiana Farreri. The latter, however, does not seem to do nearly as well at Wisley as G. sino-ornata, which has made excellent growth and promises to make a fine display in the autumn. A new Gentian which appears to have a vigorous constitution is one collected by Captain Kingdon Ward (K.W. 5840). It is just coming into bloom and somewhat resembles G. Purdomii. Other interesting plants in flower in the rock garden include Eryngium prostratum, a most attractive dwarf Sea Holly, and Primula Littoniana (Fig. 75), which commenced to bloom six weeks ago, and of which there is a group of more than a hundred plants. The heavy showers so frequently experienced of late have spoiled the flowers of many rock plants, but the after effect of rain drops which are caught in the foliage of silver-leaved subjects such as Artemisia lanata pedemontana, A. maritima and Anthemis cinerea is most attractive when the sun comes out.

Mr. Harris, who has charge of the rock garden at Wisley, has recently returned from a trip to Mt. Cenis, and has brought back with him many alpines collected there and around the White Lake. Included among these are numbers of plants of Eritrichium nanum, and one of the largest has been planted out in the rock garden under the shelter of a rock, where it is hoped that it may flourish. Both this and the remainder, which are in pots in the alpine house and frames, seem to have survived the journey well, and both look extremely healthy. Some good forms of Androsace glacialis which grows among the Eritrichium, were also brought back, and plants of Primula pedemontana were collected from the Primula rock frequently mentioned by the late Reginald Farrer in his books on alpines. Other plants which have been collected by Mr. Harris include some exceptionally fine forms of the white-flowered Ranunculus pyrenaeus, plants of Saxifraga oppositifolia, with particularly large and deep red flowers, in addition to specimens of Saxifraga caesia, S. diapensioides, S. valdensis, S. androsacea Campanula cenisia, C. Allionii, Viola cenisia, Pyrola rotundifolia and Azalea procumbens which he found in considerable quantity.

Plants in flower in the alpine house include Campanula Zoysii, with its curiously shaped corolla; the semi-double Campanula haylodgensis; the British Sea Heath (Frankenia laevis) and the Bog Pimpernel (Anagallis tenella), another British plant which may be found growing near the Wisley Hut pond. In addition to these, the tiny, yellow, composite flowers are now visible on the grey mats of Raoulia australis and of an even dwarfer species from Waroo. An uncommon plant in bloom is Wahlenbergia vincaeflora, whose flowers are white, save for a thin blue line on each petal, while another rarity is the Macedonian (?) Jankaea (Ramondia) Heldreichii, of which plants have lately been sent in.

Among the shrubs, the beautiful Eucryphia pinnatifolia is in bloom, and there is an excellent show of Ericas in the Heath garden. Signs of autumn are apparent in the yellowing of the foliage and in the colouring of the fruits of berried shrubs, among which Berberis Lycium is a good example, while numbers of white berries are visible on the Pearl-fruit of Peru Margyricarpus setosus. *J. E. Grant White.*

TIDETAN PRIMULAS OF THE SIKKIMENSIS SECTION.

The numerous species of 'Sikkimensis' Primulas collected in Tibet in 1924 are still a source of confusion to growers, though now that they have all flowered for the second year it should not be difficult to distinguish them. There is practically nothing to add to or retract from what was stated, two years ago, by Professor Wright Smith, whose careful analysis in the laboratory has fully justified itself in the garden; it may, however, be possible to separate the species and varieties more fully for garden purposes than has been possible hitherto, while at least one more species has to be recognised as present in the collection.

It may be noted that all 'Sikkimensis' Primulas, if classified according to foliage, fall into one of three groups: (i) those which have rounded leaves, with heart-shaped base, borne on distinct petioles, usually much longer than the length of the blade, *e.g.*, P. Florindae, P. firmipes (Fig. 76).; (ii) those which have oval leaves borne on long, distinct petioles; the upper surface is more or less rugose, and the margin finely toothed, *e.g.*, P. microdonta, and its varieties (Fig. 77); (iii) those which have a ribbon-shaped blade, narrow oval or linear oval, tapering gradually to a longer or shorter, but quite definite stalk; the apex may be rounded or pointed, the upper surface is not rugose, but the veins are usually sunk, *e,g.*, P. sikkimensis, P. Waltonii, P. prionotes, P. reticulata (Fig. 78).

As regards the flowers, these are usually open, bell-shaped, with narrower tube and spreading limb, more or less powdered inside with meal, usually fragrant, and usually pendent on moderately long pedicels; sometimes rather upright, especially if crowded; in one or two, more rarely three, or even four, whorls.

The species are as follow:—P. microdonta, var. alpicola, 'Moonlight' (K.W. 5746). Leaf of type (Fig. 77, left). Flowers sulphur, with open bell, the inner surface lightly and evenly powdered with white meal, very fragrant; usually in one whorl, sometimes two; crowded, tending to stand erect. Height two feet. Flowers June. Award of Merit, 1927. A finely grown plant was exhibited by Messrs. Oliver and Hunter at Chelsea in 1927, and it was whispered behind its back that it was really an illegitimate child of P. Florindae. There is nothing in the rumour.

P. Florindae, 'Giant Cowslip.' (K.W. 5781). Leaf of type (Fig. 76, left). Flowers bright, cadmium yellow, evenly powdered with white meal, rather narrow, very fragrant, borne in an immense terminal mop, pendent at first, later almost erect. Height, three to four feet. Flowers in July. Award of Merit, 1926.

There is no possibility of confusing this species with any other, the leaves alone being sufficient to distinguish it at a glance, so I need write no more about it. Those who profess to see in it "only a coarse edition of P. sikkimensis" should consult an oculist without delay.

P. microdonta var. alpicola, forma violacea, etc., 'Joseph's Sikkimensis' (K.W. 5818). This is the plant, or, at any rate, the number, which has given rise to some confusion. The seeds from which it was raised were collected in four different localities,* and included forms with white, buff, purple, claret and violet flowers. The best known form under this number is P. microdonta alpicola violacea; it will probably become known in gardens as P. violacea, and the purple and claret forms are likely to be included with it. White forms have been taken out and placed with true P. microdonta (K.W. 6117), which is what they are, in an alpine form. Buff forms are an alpine variety of 'Moonlight.' Thus K.W. 5818 by this time stands simply for P. violacea, violet or purple.

Leaf of type (Fig. 77, left). Corolla large, the limb flat when fully open, a condition not seen in any other species of the section. Flower heads very large, at first pendent, later erect owing to overcrowding, in one, sometimes two whorls. The expanded bell has a sharply defined band of white powder thickly laid on as with a paint brush round the base inside, and is very fragrant. Height, one-and-a-half to two feet. Flowers in June.

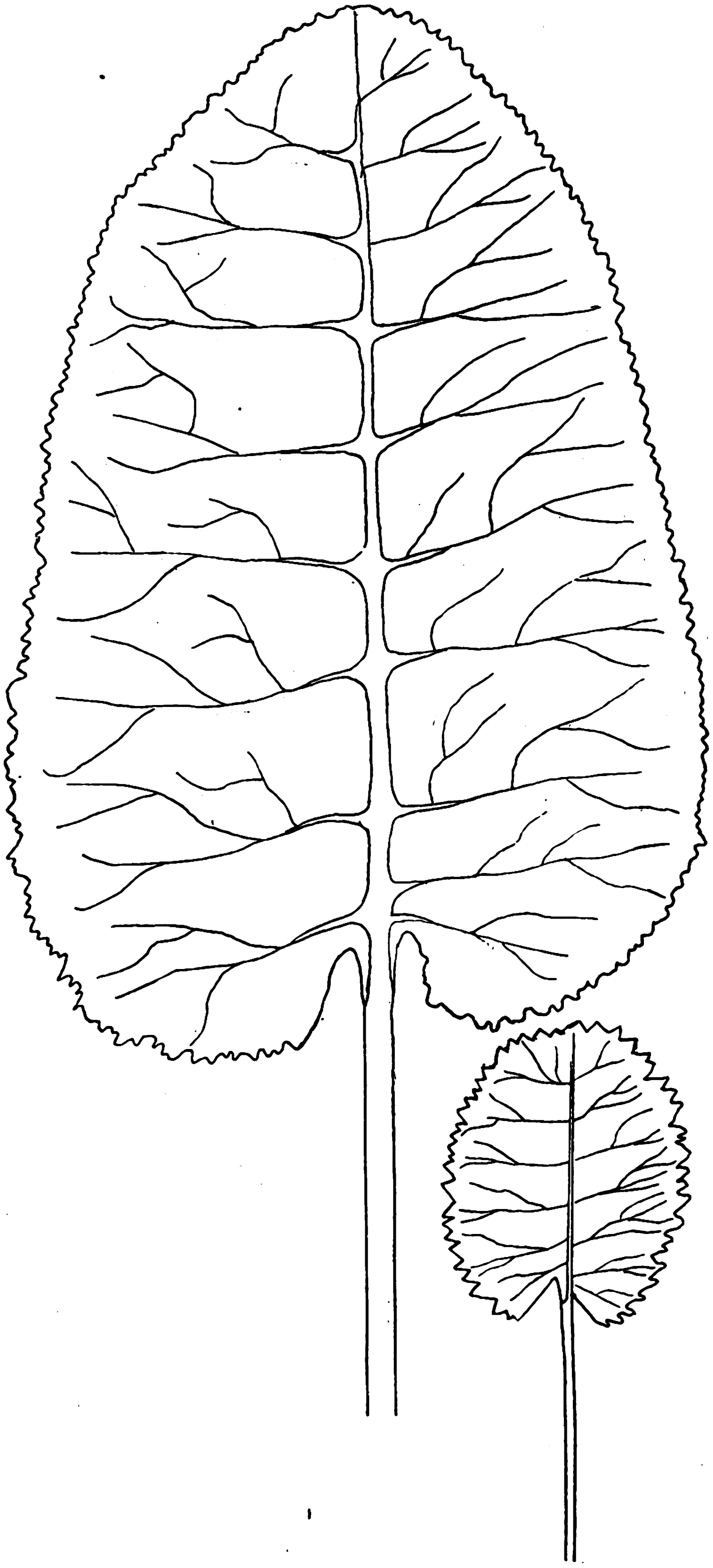

FIG. 76.—TYPES OF PRIMULA LEAVES.
Left, P. Florindae; right, P. firmipes.

By general consent the second most beautiful species of the microdonta group. A peculiarity is that some of the plants, at least, open with purple flowers, which later turn violet, so that both purple and violet flowers may be seen on the same plant at the same time. The various colours apparently breed true, if given a chance. (See below).

Under this same number at least one quite distinct, buff-flowered species has come up; hence the confusion. It is certainly very little removed from true P. sikkimensis itself, though it behaves rather differently in the garden. It is a much more robust plant than true P. sikkimensis, and it flowers later. This same species has also come to light under K.W. 6117. Two years ago, I stated that P. sikkimensis is apparently absent from Tibet, but this now requires some modification; for the present, at least, it will be convenient to regard the yellow-flowered rogue (Fig. D. 78) raised from seed under K.W. 5818 and 6117, as P. sikkimensis. It is not 'Moonlight,' *i.e.*, P. microdonta alpicola, buff form (K.W. 5746).

Thus *two* buff, or yellow, Primulas have come up under K.W. 5818. One of them is not a

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* Nyima La, both north and south of the pass; Nam La; Doshong La. All three passes are within twenty-five miles of each other, near the gorge of the Tsangpo in Tibet, about 150 miles east of Lhasa.

'microdonta' at all, but it may be P. sikkimensis. The other is a 'microdonta,' and is probably 'Moonlight,' though it is important to note that 'Moonlight' was growing entirely by itself, and seed under K.W. 5746 is of this plant, and nothing else; whereas the buff forms found in the mixed seed, K.W. 5818, were growing mixed, *i.e.*, with purples, violets and whites. Similarly, are the whites of this mixed bag P. microdonta itself (K.W. 6117), or are they the alpine variety of P. microdonta? Probably it is impossible to say for certain, because growers have naturally segregated the colours by this time, without distinction of number; nor does it greatly signify. Anyhow, that is the true story, and explains how these mixed colours got here.

P. pudibunda (K.W. 5906). A dwarf plant with fragrant Primrose-yellow flowers, and leaves as in Fig. 78. Height six inches. Flowers in June. Professor Wright Smith tells me that P. sikkimensis becomes dwarfed at high altitudes in Sikkim, and that extreme forms are called P. pudibunda. It appears to come true from seed.

Closely allied, yet distinct, is another dwarf yellow, P. sp. K.W. 5939. No seed of this was collected separately, but it was probably collected mixed with seed of P. pudibunda. The two plants are much alike, and being difficult to distinguish in flower, are impossible to separate in fruit.

P. Waltonii, 'Ruby' (K.W. 6094). Leaf as in Fig. 78 (B), broader at the apex than in the middle. Flowers glossy port-wine-red, lightly and evenly powdered with meal on the inside; drooping, very fragrant. Easily distinguished from purple-coloured specimens of P. microdonta alpicola by its leaves, and by its more bell-shaped corolla which lacks the regular band of meal. Height one-and-a-half to two feet; flowers in June. P. Waltonii is very different from the purple-flowered Chinese 'Sikkimensis,' P. secundiflora. Its flowers are half as large again, of a much richer colour, and more numerous; nor do they take on the raw-meat tint of P. secundiflora as it fades. The calyx, too, is quite a different shape and lacks the stripes of white meal which are so conspicuous against the purple-black calyx of P. secundiflora. 'Ruby' is one of the finest Primulas collected.

P. microdonta (K.W. 6117). Leaf as in Fig. 77 (left). Flowers ivory white, with a sharply defined band of cream meal round the inside, as in 5818. Fragrant. This is regarded by Professor Wright Smith as coming nearest to Franchet's original type from Yunnan. It resembles 5746 and 5818 in foliage and in flower, particularly in the tendency for the flowers to stand upright; it differs from both in flowering about a fortnight later, and in producing several tiers of flowers—always two, often three, sometimes even four in nature. Cultivated plants are as yet not sufficiently robust to flower so freely. Height, three feet; flowers in July. Perhaps the finest of the microdontas, and even of the entire collection.

A word of warning here; the very distinct leaves of P. microdonta and its varieties are beloved of slugs—far more so than those of other sorts.

The buff-flowered species already referred to as P. sikkimensis, which has appeared under K.W. 5818, has also come up under this number; at the time the seed was collected, the plant was supposed to be one of the many colour forms of P. microdonta alpicola.

P. prionotes (K.W. 6430). Leaf as in Fig. 78 (C). This species has smaller flowers than any of the others, the tube being narrow and the limb little expanded. There is a heavy coat of meal on the interior, leaving only the tips of the lobes and a small eye at the extreme base of the tube, to show the chocolate or plum-colour of the flower. Truss always drooping, never turning erect as in the 'microdonta' group. The poorest of the lot, as regards size and colour of flower, but yet in sunshine, with the light glancing through it, quite a handsome species, and a fine doer. Probably a useful plant for putting a little warm blood into the anaemic group. Height, one foot, flowers in June, rather later than P. microdonta and its allies.

Professor Wright Smith points out that P. prionotes and P. Waltonii are closely allied, despite appearances to the contrary. Both have the pinkish eye at the base of the tube, seen in none of the other species. But P. prionotes is much more mealy than P. Waltonii.

All the species enumerated above, except P. Florindae, require a rich, rather heavy soil, and plenty of root-run. Most of them prefer shade, but it must be remembered that in the damp regions where they grow best, as, for instance, the west of Scotland, sunshine is not on the menu, and they can be grown in the open without fear of reprisals. For P. Florindae, however, shade is essential, and so is water; in fact, it should be grown *in* water, preferably running, or on slopes down which water is oozing or trickling. Unfortunately, in Britain, our streams are usually low in summer and in spate during the winter, instead of high in summer and dry in winter, as in Tibet; and there is a danger of them being washed out in the winter, if grown in running streams. But if the flow can be regulated, they should be grown in the stream bed, in order to attain their full stature of four feet or more, with leaves like a Dock. Plants grown in open sunny situations, or in dry soil, are small and wizened.

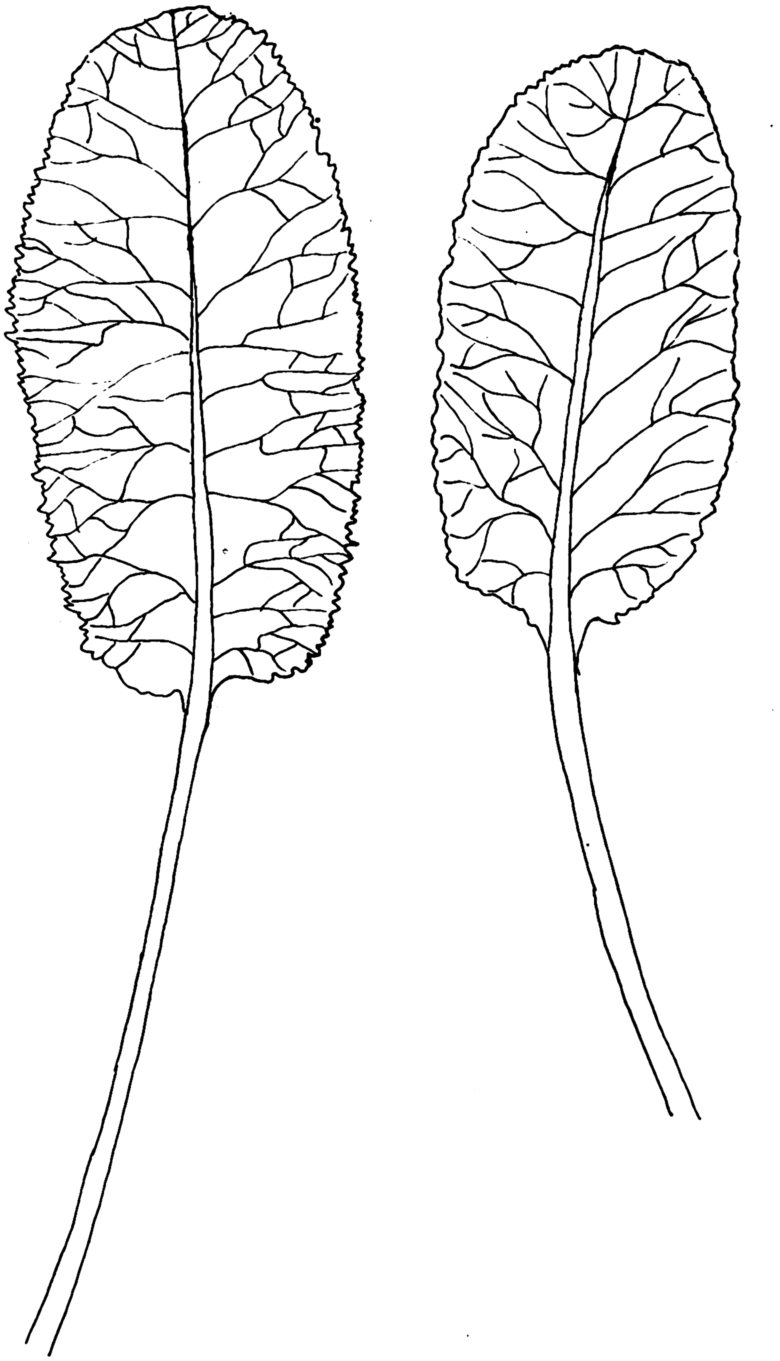

FIG. 77.—TYPES OF PRIMULA LEAVES.
Left, P. microdonta; right, P. microdonta var. alpicola.

All members of the 'microdonta' section grow magnificently in the woodland, amongst Rhododendrons, and they should be grown in masses, as is so successfully done at the Edinburgh Botanic Garden. Under these circumstances the colour forms may be expected to come true from seed. In Tibet, 'Moonlight' (P. microdonta alpicola; buff flowers) grew by itself in vast sheets in the open meadow. Where the ground became very boggy, it was entirely replaced by the very different P. tibetica, and where very dry and well-drained (the soil being gravelly) by P. atrodentata. The only other 'sikkimensis' Primula anywhere near was P. Florindae, which replaced 'Moonlight' under the trees where streams were flowing, or on heavily shaded bog slides. P. microdonta violacea also had an alpine meadow to itself, at a rather higher altitude.

P. microdonta true (the three-tiered white pagoda) grew under the bushes in a drier valley, and also kept pretty much to itself, though P. Florindae was found here, too, in suitable localities, and there were a few coloured 'alpicolas.'

P. pudibunda has the high alpine trickles—at 14,000 to 15,000 feet—to itself.

Finally, in certain woodland meadows, the coloured 'alpicolas'—buff, white, purple and violet, occurred together in panchromatic confusion.

In Szechuan I have seen P. sikkimensis and P. secundiflora growing together in profusion, yellow streaked with crimson, without the hint of a cross. It is clear that in Tibet, at any rate, where there is a distinct tendency towards segregation in countless thousands, with overlapping only at the edges, the Tibetan 'Sikkimensis' Primulas usually come true from seed; the coloured 'alpicolas' alone are doubtful. The inference is that so long as we grow them in generous clumps in this country, and give the bees a chance, they will come true here also.

But hybridisation is not to be despised, and one can imagine some wonderfully coloured P. Florindae, like an oriental mop. But it must not be forgotten that hitherto all attempts to cross a purple-flowered 'sikkimensis,' such as P. secundiflora, with a yellow-flowered one, such as P. sikkimensis itself, have failed, and it remains to be seen what the new battalions will do. So far as the coloured 'alpicolas' are concerned, at any rate, it seems very probable that all that is required to break down their caste distinctions and promote wanton matrimony is propinquity; plant a batch of colour varieties closely together, and you cannot tell what the answer will be.

Finally, it may be stated once more that of the above-mentioned species, P. microdonta alpicola (all forms), P. microdonta true, P. Florindae, P. pudibunda and P. Waltonii come from the valley of the Tsangpo and its lower tributaries 150 miles due east of Lhasa, in the heart of inhabited Tibet, and not from Western China, as the labels at Kew misinform us. P. prionotes comes from Gyantse, half way between Lhasa and the Indian frontier, by the main road, and I believe it is found also near Lhasa; the explanation of its presence around cities on the barren plateau at 13,000 to 14,000 feet being that it is a plant of the irrigation channels and small watercourses. *F. Kingdon Ward.*

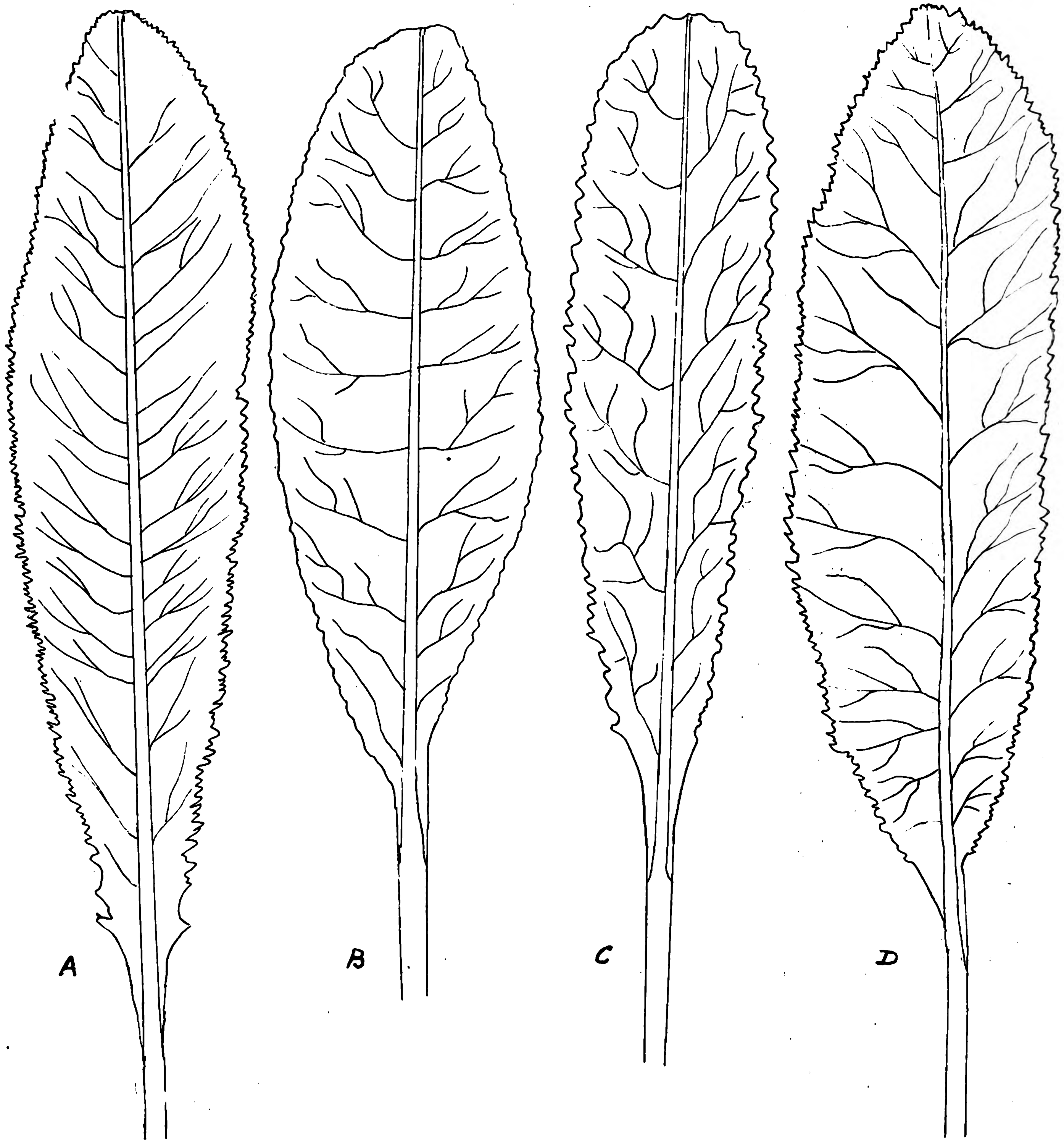

FIG. 78.—TYPES OF PRIMULA LEAVES.

A: P. sikkimensis; B: P. Waltonii; C: P. prionotes; D: P. sp. § sikkimensis (rogue with K.W. 5818, 6117).

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante. pp. 131-137).

(*Continued from p.* 153.)

ENGLAND, N.E.

Northumberland.—The fruit season is the worst on record, for the crops were ruined by cold, sunless weather and sharp frosts in May and early June. As we are only two hundred feet above sea level, we suffered more from late frosts than gardens in higher elevations. The fruit blossom was badly injured before it had opened, with disastrous results. *James Winder, Howden Dene Gardens, Corbridge-on-Tyne.*

Yorkshire.—Owing to the late frosts and cold winds, the fruit crops in this neighbourhood are very backward. With the exception of Pears, the yields are good. Black Currants, Strawberries, Red Currants and Raspberries are all splendid crops. Our soil is on the light side and rests on chalk. The gardens are about ninety feet above sea level. *John Turton, Sowerby House Gardens, Bridlington.*

——Some of my Apple trees are carrying crops this year which may be described as in excess of the average. These are Irish Peach, Lady Sudeley, James Grieve and Rev. W. Wilks. The first-named is an early-flowering variety, and the blossoms were expanded when three sharp frosts occurred in April, that on the 30th registering 6°. The tree was in full bloom on April 21. All the other trees named did not flower until early in May, and to some extent escaped damage by frost. Of small fruits, Black Currants and Gooseberries are excellent, though late in ripening owing to the cold, wet weather of June. Loganberries and Raspberries are fruiting very well indeed. *W. H. Bolton, 8, Ash Grove, Beverley Road, Hull.*

——Our crops of Apples, Pears and Plums are the smallest we have had for some years; in each case, however, the fruits that have set are of good quality. Small fruits are abundant, and Strawberries, although a few of the earliest flowers were destroyed by frost, are a good average crop. The trees and bushes in all cases carried plenty of blossom, and I attribute the failure to the very severe frosts we experienced during the last week of April, reaching the maximum severity on the 30th with 10°. Small fruits, however, were not in a forward enough condition at that date, to take any harm. The soil at Dalton is a medium loam resting on clay, with a base of chalk. *J. S. Coates, Dalton Hall Gardens, Beverley.*

——The Apple, Pear and Plum crops were spoilt by late frosts and high winds, except in sheltered places. Plums are a complete failure. Small fruits showed good promise, but a long period of dry weather somewhat spoilt them. *James E. Hathaway, Baldersby Gardens, Thirsk.*

——At the time of writing, Apples and Pears are not much bigger than Peas. Small fruits are very fair, Gooseberries very good, and Strawberries a moderate crop. Currant bushes are carrying heavy crops, and all fruit bushes are very clean, which is not usual in this district. *Alfred Dryden, Field House Gardens, Triangle, Halifax.*

——Late frosts spoilt the fruit crops. Isolated trees of Bramley's Seedling, James Grieve and local sorts are the only Apples to crop this year. Gooseberries are a heavy yield and cleaner than usual. Strawberries were a small crop and soon over, owing to cold, wet nights prevailing when the bushes were in bloom. *J. G. Wilson, New Millerdam, Wakefield.*

ENGLAND, E.

Essex.—The fruit crops are, on the whole, satisfactory. Apples, generally, are a good crop, as also are Pears. Plums are a complete failure, the blossom having caught the frost badly. Peaches and Nectarines are average crops; Gooseberries, Black Currants and Raspberries were abundant, but Red Currants are very scarce. I am watching Strawberries planted in the early autumn of 1926 and in February of this year with interest. At the moment they look promising, with a few exceptions. *Arthur Bullock, Copped Hall Gardens, Epping.*

——There was a splendid show of blossom on most of the fruit trees here, and the outlook for a good fruit crop looked very promising till frost destroyed a great many Pears and Plums, but left average crops. Apples fared better, as they were late coming into blossom. The frost destroyed quite one half of the Strawberry and Raspberry crops. All the fruit trees about here are very clean this year; no doubt the late frosts had something to do with this. *Charles A. Heath, Morleys, Great Hallingbury, Bishop Stortford.*

——There is an abundance of Apples, Pears and Raspberries, and the quality is excellent. Strawberries suffered badly owing to the continual rains in the winter and spring, many plants decayed, and what bloom the remainder bore was destroyed by frost. Peaches and Nectarines also suffered injury from late frosts and hailstorms. *W. T. Franklin, Little Laver Hall Gardens, Harlow.*

——The promise of most bounteous fruit crop swas spoilt by frosts on April 27 and the four following nights, when 13°, 11°, 11°, 12° were registered. The frosts were followed by very hot weather. All the early varieties of Apples were spoilt, also Pears, only a few of the late Apples escaping injury, such as Bramley's Seedling, Lane's Prince Albert, Lady Henniker and a few Cox's Orange Pippin. Our soil is of medium texture overlying gravel. *John Dewhurst, Gilston Park Gardens, Harlow.*

——Much injury was caused to fruit blossom by late April frosts, particularly to Pears, Plums and Strawberries, but many Apples escaped injury. The soil is heavy generally. The best dessert fruits are produced from the lighter soils. *C. Wakely, East Anglian Institute, Chelmsford.*

(*To be continued*).

FRUIT GARDEN.

GOOSEBERRIES.

Gooseberries rarely receive a full share of appreciation; nevertheless, it is incumbent upon the gardener to select, when planting, varieties of high quality and such as will cover as long a season as possible. Gooseberry varieties are seldom chosen with the same care that is bestowed upon, for instance, Apples or Pears, and yet amongst Gooseberries there is a wonderful range of flavours, consequently discrimination is necessary when selecting varieties to plant. The Gooseberry thrives in any good garden soil of moist character, and reaches perfection in a rich loam improved by the addition of rotted manure; young plants should be placed six feet apart, and the "triangle" method of spacing adopted, thus using the available space to the best advantage. An open position should be chosen. An important item of cultivation is to fork the beds or plantations lightly each autumn and to apply a generous dressing of well-rotted manure.

Pruning demands some care in the early stages of growth, the objective being shapely bushes capable of bearing fruits of first-rate quality; each bush should have a clear stem of six or seven inches to admit of the soil being "worked" underneath, for if the branches are allowed to develop in closer proximity to the soil surface, the resulting fruits will become sullied and quite unfit for use.

During the first year after planting from the cutting bed the shoots should be shortened to three or four eyes each; the following summer two new breaks should be secured from each shoot and the laterals stopped to form spurs, while during the following winter the main shoots should be shortened to about one foot, these again being allowed, in due course, to retain two or three shoots each. This treatment results in well-formed bushes and the subsequent pruning should mainly consist in cutting back the lateral shoots and the maintenance of an open centre. Henceforth, the leading shoots need very little restriction beyond an occasional necessary shortening; undue "stunting" can only result in small crops of fruits of poor quality.

Old, worn-out shoots should be removed in winter, or directly after the fruits have been gathered, retaining, in established trees, sufficient strong, young growths with which to replace the discarded branches.

Fan-trained trees or single, double or triple cordons are excellent for planting against a north wall. Cordon plants trained on a trellis are suitable for growing in the open and are especially attractive as a background to narrow flower borders. Gooseberries may also be trained successfully on cylindrical or vase-shaped wire supports, and it is worth noting that the berries obtained from trained specimens are invariably of fine quality.

In addition to those in the open it is desirable to form a plantation of Gooseberries on a north border, thus securing a supply of fruits late in the season. From the variety Red Warrington, so placed, I have gathered excellent berries in November.

The propagation of the Gooseberry is easily effected from cuttings inserted in the autumn; well-ripened shoots should be chosen and removed at their junction with the older wood. If plants with stems are needed the eyes should be carefully removed from the lower half and the top shortened to admit of each cutting being about one foot in length; the prepared cuttings may be inserted rather thickly in trenches four inches or five inches in depth and one foot asunder, and they should be made very firm by treading. An open position in the garden should be chosen for the cutting-bed.

The following is a careful selection of varieties, chosen with a view to the longest possible extension of the season during which Gooseberries are available:—

Red.—Whinham's Industry, Warrington (an indispensable variety), Red Champagne, Speedwell, Crown Bob, Ironmonger and Rifleman.

Yellow.—Early Sulphur, Golden Gem, Langley Beauty, Leveller, Leader, Rambullion and Catherina.

White.—Whitesmith, Mitre, Transparent and Careless.

Green.—Bright Venus, Howard's Lancer, Keepsake, Langley Gage, Green Ocean and Rosebery.

Gooseberry fruits gathered before they commence to ripen are excellent for bottling, whilst preserve is equally good whether made from the ripe or the immature fruits. Various delicious sweets are prepared from Gooseberries, while as a dessert fruit the Gooseberry already occupies a high position. *Ralph E. Arnold.*

HOME CORRESPONDENCE.

Lorette Pruning.—Assuming myself to be the enquirer that Mr. Impey refers to in your issue of July 23, I would esteem it a favour to be allowed to endorse all that he states in favour of Lorette pruning, except in the case of converting trees which have been pruned on the old system. I find when very heavy cutting out has to be done, the transition period may well be extended to more than three years. Firstly, the thinning out in many cases appears to be far too drastic, and, secondly, by the slower process a crop of fruit is obtainable until the Lorette pruned branches come into bearing. The ultimate shape of the tree must always be kept in view. Like Mr. Impey, I am a new but enthusiastic convert to this system. My garden being situated on a light, shallow soil, where site preparation is absolutely imperative, the Lorette system appealed to me as being one which would practically eliminate the continual pruning away of hosts of useless shoots, thereby concentrating the nutriment obtained from a restricted root-run to the production of fruit spurs and fruits. In my opinion, a great advantage may be claimed for the Lorette system, for inasmuch as all pruning is carried out during the growing season, the wounds are completely healed a few weeks after the operation, which is surely better, from a disease-resisting point of view, than a cut made in mid-December, which cannot hope to callus over until the following spring. By translating *Lorette Pruning* from the French, the late Mr. W. R. Dykes gave us a book full of interest and at a price within the reach of all. *Joseph Cheer, Red Gables, Beech Avenue, Purley.*

Prunus Pissardii Fruiting.—On two trees of Prunus Pissardii in these gardens several fruits are hanging; the trees are side by side and facing south. When they were planted I cannot say, but they have reached a height of twenty feet or more. The fruits are the size of a good Damson, not quite so dark in colour as the foliage of the trees. As I do not remember having heard of P. Pissardii fruiting previously, I send this note. *J. Kitt, Wasing Place Gardens, Near Reading.*

Treatment of Golf Greens.—I read with great interest the article appearing in your issue of July 23, on the "Treatment of Golf Greens," but I am not quite sure whether the writer means five lbs. of sulphate of ammonia for 1,000 square feet, or five lbs. of the mixture of sulphate of ammonia and sand. Five lbs. of sulphate of ammonia per thousand square feet works out at nearly two cwts. per acre and this would be a very heavy dressing for a season, and if applied fortnightly would, I fear, tend to burn the grass. I can quite imagine such liberal manuring would crowd out everything except the grass, but it may make the cutting of the lawn or golf green no easy matter. I imagine there must be a slip somewhere, and that the figures given are either five lbs. of the mixture (no small dressing) or else, the "one thousand" refers to square yards instead of square feet. *William Low, Laurencekirk.*

[The figures given on p. 61 are quite correct; the dressing works out at about three-quarters of an ounce of sulphate of ammonia per square yard.—Eds.]

Failures with Strawberries.—Like Mr. Bullock (p. 115) we are battling against the problem of Strawberry failure, and it is satisfactory to learn that nurserymen and others are giving the subject their special attention. I am inclined to think that climatic conditions are, to a certain extent, responsible for the spread of the trouble. I obtained some plants in pots last August from an old-established firm of nurserymen; half were potted up for forcing, others were planted in a cold frame, and the rest put outside in good ground some distance away from the old beds. Those in pots and cold frames proved satisfactory and gave good fruits of splendid flavour, while those outside dwindled away; the autumn was cold and wet, and the plants made no attempt to grow. In the spring of this year, I obtained from the same firm five hundred open-ground runners of Royal Sovereign, and laid them in a shallow trench, somewhat shaded; when they had made a few fresh roots they were planted on a piece of ground which until three years ago had carried Black Currants for a long number of years; this was trenched deeply and allowed to lay fallow for a year, and in the second year it was planted with Potatos. It was on this site the runners were planted last spring. May being a hot, dry month the Strawberry plants were mulched with old, rotten manure; since then they have, on the whole, made splendid plants. There are a few weak specimens, about two dozen, but no red leaf. The runners have been removed regularly. What this batch will look like next spring remains to be seen. I am not very optimistic because the present wet, sunless season has encouraged strong, sappy foliage, whereas sun is required to ripen up the crowns that are now becoming prominent. We relied on home-grown runners until three years ago, when the deterioration set in, and we had to obtain fresh stock both for forcing and for outdoor crops. *A. B. Wadds, Englefield Gardens, Reading.*

SOCIETIES.

BRITISH GLADIOLUS.

The exhibition of the British Gladiolus Society was held at Taunton on Wednesday and Thursday, August 10 and 11, in conjunction with the Taunton Deane Horticultural and Floricultural Society's fifty-fifth annual show. The schedule included ninety-eight classes; several cups, medals and other trophies were offered for competition by supporters of the Society.

One of the most valuable prizes was a silver tea service valued at £25, to be won outright, offered by Messrs. Abol, Ltd., for an exhibit demonstrating the advancement of the Gladiolus as a decorative cut flower, to be arranged on a floor or table space of one hundred superficial feet. This was won by Mr. H. Clarke, of Taunton; second Messrs. Hewitt and Co., Ltd., Solihull; third, Messrs. W. Treseder, Ltd., Cardiff. For a display of Gladioli, arranged for artistic effect on a table space twenty feet by four feet, prizes of £15, £5 and £3 were offered. The premier award was made to Mr. W. J. Unwin, Histon, and the other exhibitor, Mr. W. Glen, Chippenham, was awarded the second prize. Messrs. W. J. Unwin also won the first prize for a collection of Primulinus hybrids; second, Messrs. K. Velthuys and Co., Holland; third, Mr. W. Glen.

Messrs. Kelway and Son, Langport, excelled in the class for twenty-four new varieties or seedlings, distinct, one spike of each, of large-flowered Gladioli, and Messrs. K. Velthuys and Co. were second. The best twenty-four varieties of Primulinus Gladioli, distinct, new sorts or seedlings, were shown by Messrs. R. H. Bath, Ltd., Wisbech; second Messrs. Kelway and Son.

Mr. W. Glen was the only exhibitor of twelve distinct varieties of large-flowered Gladioli, and he was awarded the first prize. Messrs. K. Velthuys and Co. showed the best twelve distinct varieties of Primulinus Gladioli; the best three distinct varieties of large-flowered white Gladioli; the best pink, the best scarlet, and the best mauve or lavender varieties. The finest salmon and scarlet Gladioli were shown by Mr. W. Yandell, while Mr. A. E. Amos, Colchester, excelled in the class for purple varieties.

There was keen competition in the single spike classes for large-flowered and Primulinus varieties, there being four to seven entries in each class. The chief prize winners were Mr. W. Yandell, who won nine first prizes, seven second prizes, and one third prize; Mr. A. E. Amos, who won ten first prizes, one second, and three third prizes; and Mr. W. Glen, who won two first prizes, ten seconds, and four third prizes.

Mr. A. E. Amos was very successful in the classes for seedlings. He won the first prize for six large-flowered varieties with Jack Hobbs, Capt. P. Eckersley, Sidney Firman, Geraldine, Lieut. Walton O'Donnell, and John Ansell, also in the class for three varieties of new Primulinus seedlings with Christine Prior, Vera Prior and Basil Prior.

Special awards were made as follow:—

The Society's Championship Cup for new large-flowered varieties, to Messrs. Kelway and Son, Langport; The Society's Championship Cup for new Primulinus varieties, to Messrs. R. H. Bath, Ltd., Wisbech; the President's Special Prize in Group "A," (open), to Mr. W. Yandell, Maidenhead; the President's Special Prize for Classes 10 to 19 (open), to Messrs. K. Velthuys and Co.; The "Kelway" Challenge Cup for British varieties, to Mr. W. E. Samuel, Wrexham; the "American" Challenge Vase for varieties of American origin, to Major G. Churcher; the "Unwin" Challenge Cup for twenty-four varieties, to Mr. I. S. Thomas, Liverpool; the "Bath" Championship Cup for twenty-four spikes, to Mr. A. E. Amos; the "Garden" Challenge Trophy, for six spikes, to Mr. I. S. Thomas; the Society's Silver Medal for the largest number of points in Group "B," to Mr. W. E. Samuel; and the *Gardening Illustrated* Medal in Group "C," to Mr. F. W. Ransome, Colchester.

Trade Groups.

Non-competitive exhibits were numerous and good. The Society's Gold Medal offered for the best trade exhibit (1,000 square feet) was awarded to Messrs. Kelway and Son, Langport.

A Gold Medal and the Society's Silver-Gilt Medal were awarded to Messrs. Sutton and Sons.

Silver-Gilt Medals were awarded to Messrs. J. Carter and Co., Messrs. R. H. Bath, Ltd., Messrs. J. J. Grullemans, Ltd., Messrs. K. Velthuys and Co., and Mr. W. J. Unwin.

Silver Medals were awarded to Messrs. Dobbie and Co., Ltd., and Messrs. Hewitt and Co., Ltd.

ROYAL HORTICULTURAL OF IRELAND.

The summer show, held in conjunction with the Royal Dublin Society's Horse Show, in a spacious hall allocated for the purpose, proved highly successful, not a few of the more critically disposed visitors among the thousands attending it proclaiming it the best yet held under the auspices of the veteran Society. Trade exhibits, as usual, were the backbone of the show, to which six Gold Medals were awarded by the judges, apart from Silver and Bronze Medals for smaller collections.

Gold Medals were awarded as follow:—Messrs. Allwood Bros., for a superbly set up stand of Carnations, of which four hundred dozen blooms had been sent from the Wivelsfield Nurseries, and among which White Pearl, Coral Glow, Topsy, Spectre, Triumph, Butterfly, Maine Sunshine, and the two Laddies (pink and red), each *en masse*, were conspicuous; to Messrs. James Carter and Co., who contributed another cross-Channel exhibit of choice vegetables.

Other outstanding features of the show were the tastefully designed and admirably furnished model gardens for which the Dublin firms of Sir Jas. W. Mackey, Ltd., and Messrs. W. Drummond and Sons, Ltd., were responsible, Messrs. Mackey's exhibit comprising a brilliant bed of tuberous Begonias, with borders of choice hardy flowers at the entrance to the hall, these making an imposing set off to floral groups beyond where Messrs. Drummond completed the *coup d' oeil* in a quiet and restful expanse of rock gardening with alpine planting, and a central pool wherein Water Lilies added to the effect. As implied, each were Gold Medal exhibits; similar honours being gained by Mr. S. Gilthorpe, Monkstown House Nurseries, Co. Dublin, for well staged Gladioli in quantity, making a great splash of colour, and Messrs. Alex. Dickson and Sons, the "Hawlmark" firm, for a large, light and graceful stand of Roses, Carnations and Sweet Peas.

Silver Medals were awarded to Messrs. Chas. Ramsay and Son, Royal Nurseries, Ballsbridge, for foliage and flowering plants; to Messrs. Pennick and Co., Delgany Nurseries, Co. Wicklow, for choice hardy flowers; The Dublin Nursery Co., Blackrock, for Roses; Mr. James Dugan, Carlow, for a collection of border Phloxes; and the Rt. Rev. and Hon. B. J. Plunket, St. Anne's, Clontarf (gr. Mr. P. D. Reid), for a collection of forty species and varieties of Thyme in pans—quite as interesting as it was an uncommon exhibit.

Bronze Medals were awarded to Major French, Booterstown, for a collection of vegetables and Sweet Peas; and Messrs. Hogg and Robertson, Dublin, for greenhouse and window plants; while Mr. A. L. Speirs, Burtown Nurseries, Athy, Co. Kildare, was highly commended for rock and alpine plants, as was Mr. James Allan, seedsman, Kilkenny, for hardy flowers.

The Hon. A. E. Guinness, Glenmaroon (gr. Mr. W. Stevens), was an easy first prize winner for a group of foliage and flowering plants, open to all; Messrs. Brittain, Donnybrook (gr. Mr. D. Crassen), second. In the open class for a group arranged for effect on 200 superficial feet, competing for the President's Cup (The Marquis of Headfort), The Donard Nursery Co., Newcastle, Co. Down, with a glorious group, in which towering sheaves of Sparaxis pulcherrima played a prominent part, was another easy winner, with Mrs. Raymond Stephenson, Cranford, Stillorgan Road (gr. Mr. M. Buggle), second. There was but one entrant for the collection of cut flowers, filling a table space of twenty-four feet by six feet, and that was placed second. Chief winners in the smaller collections of hardy cut flowers were the Misses Bird, Dundrum, Co. Dublin (gr. Mr. Smith); Major Kelly, Montrose, Donnybrook (gr. Mr. J. McDermott); Mrs. Bernard, Belfield, Stillorgan Road (gr. Mr. J. Dawson); Captain Daly, Templeogue (gr. Mr. J. Murtagh); Mr. C. Wisdom Hely, Oakland, Rathgar (gr. Mr. J. H. Orr); and Mrs. Gubbins, Kilfrush, Co. Limerick (gr. Mr. J. Shepherd). Canon Kingsmill-Moore, D.D., Cedar Mount, Dundrum, excelled with hardy Ferns, with Miss Cunningham, Trinity Hall, Dublin (gr. Mr. J. McLindon), and Captain Daly following as placed.

Roses, in the classes restricted to the trade, found honours divided between Messrs. S. McGredy and Son, Royal Nurseries, Portadown, and the Donard Nursery Co.; Messrs. McGredy and Son put up a big group arranged for effect on a table space of one hundred square feet. Conspicuous among these Roses we noted three of the firm's new Gold Medal seedlings, viz., Mabel Lynas, Margaret McGredy and Patience. The same firm contributed the best six baskets of Roses, distinct, and also the best stand of new varieties not exhibited prior to 1925. The Donard Nursery Co. won outright the Challenge Cup presented by Mrs. H. B. Maloney, with forty-eight blooms, and won the first prize for twelve blooms distinct. In five classes for Roses in the amateurs' section, the first prize winners were Mr. C. Wisdom Hely, Mrs. McKeever, Batterstown, Co. Meath; and Major King-French, Dolland, Clonsilla, the Hon. A. E. Guinness having the best six vases in a long array of Ramblers.

Dahlias were poorly represented. Miss Cunningham had the best stand of tuberous-rooted Begonias, and Mr. J. G. Knox, Templeogue, the best six doubles. Antirrhinums were good, Mrs. West, Kilcroney, Bray (gr. Mr. C. Coster), the Hon. A. E. Guinness, and Mr. C. Wisdom Hely being placed as mentioned. Pentstemons and Phloxes were fair. For Gladioli, twelve vases distinct, three stems in a vase, Mrs. West won the Challenge Cup presented by herself, and also led in the open class for a group twelve feet by four feet, Mr. S. Gilthorpe being placed second. Annuals, shown on a space ten feet by four feet, were good and here Mr. Wisdom Hely was first, Mr. C. L. Wrenn second, and Miss Darley, The Orchard, Bray (gr. Mr. P. Mohan), third. The Hon. A. E. Guinness had the best twelve vases of Carnations, Miss Darley, Violet Hill, Bray (gr. Mr. J. Murphy), the best six vases, and Mrs. Caulfield the best border varieties. Much interest was shown in the class for a vase of any hardy plant not classed competing for the Bronze Medal presented by *Gardening Illustrated*, this being won by Mr. Wisdom Hely with a good bunch of Campanula pyramidalis alba, the less seen Veratrum nigrum album, shown by Miss Wynne, being placed second.

Sweet Peas were plentiful and, for the season, good, Mr. A. F. McNulty, Bray (gr. Mr. J. Sutton), being first prize winner in the champion class with eighteen bunches, distinct; Captain E. C. Shirley, Lough Fea, Carrickmacross (gr. Mr. W. H. Hinch), second; Miss Darley, Mr. Wisdom Hely, Mrs. Foster and Mr. J. Moran excelled in the smaller classes. In the ladies' class for the best basket, Mrs. Gilthorpe led, followed by Mrs. Seaman and Miss Gilthorpe in the order named. For the group of Sweet Peas on a table sixteen feet by four feet, Mrs. West secured first prize for sturdier blooms than those from Mr. W. E. Sands, Lisburn, N. Ireland, who had a light and elegant arrangement.

The thirty-four classes for fruit were generally well filled, excepting Grapes, which, with the exception of fair Black Hamburghs from Mr. Hely and Mrs. Gubbins (first and second) were not represented. Peaches and Nectarines were good; Mr. Hely, Mrs. Hamilton, Luttrellstown, Clonsilla (gr. Mr. C. Pilgrim), and Major Kelly being placed in the order named for Peaches; Mr. J. C. Toler-Aylward, Shankill Castle, Co. Kilkenny (gr. Mr. H. Hall), Mrs. Hamilton and Mrs. Brittain excelling with the latter. Apples generally appeared undersized; the Sisters of Charity, Bray (gr. Mr. J. Tully) had the best collection of six dishes, with Captain Daly second, and Mrs. Hamilton third, out of seven entries. Single dishes call for little comment, the chief prize winners being those already noted. Gooseberries were plentiful, the outstanding amber variety being Mr. H. E. Joly's Golden Wonder, raised by him at Millbrooke, Rathangan, Co. Kildare, and which had previously been awarded a Silver Medal.

Vegetables rather surprised some cross-Channel friends by their excellence and numbers; two fine collections were shown on tables twelve feet by four feet in the champion class, for which the Hon. A. E. Guinness and Mrs. Bernard received first and second prizes, respectively; the first-named also excelled in the class for twelve distinct kinds. The Hon. Gordon Campbell, Clonard, Terenure (gr. Mr. J. Cook), won first prize for a collection, and obtained several first prizes in the single dish classes.

NORTHAMPTON MUNICIPAL HORTICULTURAL.

This society held its twelfth annual show on August 3 and 4, in Abington Park, when over 21,000 people paid for admission. The trade exhibits were exceedingly fine. Mr. W. J. Unwin, Histon, won the Edward Lewis fifty guinea Challenge Cup offered for the best non-competitive display in the show, for the second time in succession. His Gladioli were especially fine.

The Dover fifty guinea Challenge Rose Bowl, offered for a group of Roses, was won by Mr. E. J. Hicks; second, Mr. H. Drew, Longworth, Bucks.

The best exhibit of Sweet Peas, for which the Astbury twenty-five guinea Challenge Cup was offered, was shown by Messrs. King and Co., Coggeshall.

A fifty-guinea Challenge Cup was offered for a collection of perpetual-flowering Carnations, and this was won by Messrs. C. Engelmann, Ltd., Saffron Walden.

The entries in the open classes were numerous. Mr. Holmes, Chesterfield, excelled in the class for a group of flowering and foliage plants; second, Messrs. H. E. and M. Lack, Wellingboro', who won the first prize for a collection of Begonias; second, Mr. D. C. Guthrie, of East Haddon Hall (gr. Mr. P. Barr).

Gold Medals were awarded to Messrs. I. House and Son, Bristol, for Scabious; Messrs. Bakers, Wolverhampton, for Phloxes; Messrs. T. Perkins and Sons, Northampton, for a miscellaneous collection of plants and cut flowers. (This firm was also awarded a Gold Medal for a rockery, and a Silver Medal for a fine collection of ornamental trees and shrubs); Messrs. John Perkins and Son, Northampton, for herbaceous Phloxes; and Messrs. Daniels Bros., Norwich, for a miscellaneous collection of plants and cut flowers.

Silver Medals were awarded to Messrs. Ramsbotham and Co., Bletchley, for a collection of Roses and Ferns; and to Messrs. Woolman, Shirley, Birmingham, for a collection of border Carnations.

NATIONAL CARNATION AND PICOTEE.

Northern Section.

The annual exhibition of the above Society was held on Saturday, August 6, in the British Legion House, Sheffield.

The hall was crowded with flowers and competition was very keen in the amateur classes. In Division I. for flowers from the open border, a very high standard was maintained throughout the whole division, and the exhibitors are to be congratulated on the excellence of their flowers.

In Division II, for pot grown plants, Mr. John Macfarlane, of Airdrie, put up a grand collection and won the first prize in every class.

The judges and visitors from many parts of the country congratulated the Secretary and officials on the most excellent show, and remarked that Sheffield had beaten all records and put up the finest display of Carnations ever seen outside London. There were five exhibits by trade growers.

Almost all the exhibits were staged in vases, the staged and dressed board classes only receiving two entries. In the novices' division there were six exhibits. The following awards were made.

Division I.—Amateurs; blooms from the open border. Three Selfs (dissimilar).—First, Mr. W. Secker; second, Mr. S. Rabjohn; third, Mr. A. J. Woodland. Three Fancies (dissimilar): First, Mr. W. Secker; second, Mr. S. Rabjohn. Three Yellow Ground Fancies (dissimilar); First, Mr. S. Rabjohn; second, Mr. W. Secker; third, Mr. G. Hill. Three White Ground Fancies (dissimilar): First, Mr. W. Secker; second, Mr. G. Hill; third, Mr. S. E. Fletcher. Three blooms, Clove-scented (dissimilar): First, Mr. W. Secker; second, Mr. S. Rabjohn; third, Mr. A. J. Woodland. Twelve blooms, Selfs and Fancies (dissimilar); First, Mr. W. Secker; second, Mr. A. J. Woodland; third, Mr. S. Rabjohn. Four Vases, three blooms, any variety: First, Mr. W. Secker; second, Mr. S. Rabjohn; third, Mr. A. J. Woodland.

Division II.—Blooms from plants under glass.—Three Selfs (dissimilar): First, Mr. John Macfarlane; second, Dr. G. H. Mead; third, Mr. S. Rabjohn. Three Fancies (dissimilar): First, Mr. J. Macfarlane; second, Dr. G. H. Mead. Three Yellow Ground Fancies (dissimilar): First, Mr. J. Macfarlane; second, Dr. G. H. Mead; third, Mr. S. Rabjohn. Three White Ground Fancies (dissimilar): First, Mr. J. Macfarlane; second, Dr. Mead. Three blooms Clove-scented (dissimilar): First, Mr. J. Macfarlane. Three Picotees (dissimilar) First, Mr. J. Macfarland. Twelve blooms, Selfs and Fancies (dissimilar): First, Mr. J. Macfarlane. Four Vases, three blooms any variety: First, Mr. J. Macfarlane.

In the classes for novices who grow fewer than one hundred plants, Mr. S. Taylor won four first prizes.

In the Open Classes, Mr. H. Woolman, Mr. P. Smith and Messrs. Torrance and Hopkins were the most successful exhibitors.

The National Carnation Society's Certificate offered for six blooms of any variety or varieties, was awarded to Mr. Joseph Firth, Liversedge, Yorkshire.

The President's Cup, offered for the premier bloom in the show, and the Edmund Charrington Medal were both awarded to Mr. H. Woolman, Birmingham, for the variety Mrs. Edmund Charrington. The Presidents' Challenge Cup and Society's Silver Medal for the highest points in Division I were awarded to Mr. W. Secker. The Society's Silver Medal for the highest number of points in Division II, was awarded to Mr. J. Macfarlane, Airdrie, Scotland. The Society's Silver Medal, offered for the largest number of points in Division VI, was awarded to Mr. H. Woolman, Birmingham.

New Varieties.

First Class Certificates.

Jim Dalton, lavender-mauve self, shown by Messrs. Torrance and Hopkins; *M. Black*, dark crimson self, shown by Mr. P. Smith; and *British Legion*, yellow-ground Fancy, shown by Mr. H. Woolman.

Awards of Merit.

Englinton, rose madder Fancy and *Rosie*, deep rose-pink, both shown by Messrs. Torrance and Hopkins; *Clarence*, yellow ground Fancy, shown by Mr. H. Woolman; *Allan-a-Dale*, yellow-ground Fancy, shown by Mr. J. Firth, Liversedge.

Non Competitive Exhibits.

The Society's Gold Medal was awarded to Messrs. C. Engelmann, Ltd., for a grand display of perpetual-flowering Carnations.

Silver Medals were awarded to Mr. E. H. Pearson (amateur) for a display four feet by three feet; to Messrs. Torrance and Hopkins, Glasgow; and Mr. John Kirkham, Chapeltown, for trade groups.

ROYAL CALEDONIAN.

At the monthly meeting of this Society, held at 5, St. Andrew Square, Edinburgh, on August 2, at which Mr. E. P. Laird, Councillor, presided, Mr. J. S. Brunton, Burnley, read a paper on "Refrigeration Applied to Horticulture." Refrigeration had, he said, revolutionised the methods of the florist, and had been the means of increasing the export of flower roots and flowering plants from such countries as Holland, Germany and Japan, from which large quantities of these plants were imported into Britain annually, as well as into the United States and other countries. By this means a succession of flowers could be maintained throughout the year, and scientific and practical men working together might yet discover new systems of treatment and new subjects which would still further benefit the industry and mankind generally.

The exhibits were:—Sweet Peas, by Miss Burton, Polton (awarded a Silver Medal); Campanula Hallii, by Mr. R. B. Lower, Edinburgh, and Dianthus Napoleon III, by Messrs. Laird and Dickson, Edinburgh. Mr. Farquharson, Carlowrie Gardens, Kirkliston, was awarded first prize for a vase of Sweet Peas, and Mr. R. B. White, Murrayfield, second. Mr. Wm. Lamb, Prestonfield, Edinburgh, was awarded first prize for two Cauliflowers, and Mr. W. G. Scott, Murrayfield, second prize.

ROYAL HORTICULTURAL OF ABERDEEN.

August 18, 19 and 20.—Favoured with delightful weather, the Earl of Caithness gave a happy send-off to the annual show of the Royal Horticultural Society of Aberdeen in the Hazlehead Public Park, kindly loaned by the Aberdeen Town Council on the above dates. No finer setting could have been chosen for a floral display than this finest of Aberdeen's communal parks. The exhibits were accommodated in large marquees, which fitted beautifully into the sylvan surroundings, and the famous band of H.M. 13/18th Hussars (Queen Mary's Own) provided excellent music, while in the evenings electric fairy lamps dotted all over the park formed an entrancing scene. The entries numbered 1,161, twenty-one more than those of last year, and notwithstanding the abnormally unfavourable season, the display proved one of the best ever held under the auspices of the Society. The gate receipts amounted to £643, a sum only exceeded once in the long history of the Society—in 1892.

Plants in Pots.—The marquee devoted to this division proved a source of great interest and pleasure to the many visitors. The best of the circular groups of pot plants arranged for effect on the ground, and not exceeding ten feet in diameter, was exhibited by Mr. James Cook, of Enfield (gr. Mr. Robert Murray). The group comprised remarkably well-grown specimens of Dracaenas, Liliums, Coleus, Ferns of various kinds, Begonias, Gloxinias and Celosias; second, William Mackinnon, Esq., The Firs, Murtle, near Aberdeen, whose gardener, Mr. A. Murray, is a brother of the Enfield gardener; while A. E. Benzie, Esq., Morkeu (gr. Mr. William Henderson) was third. In the class for four specimen plants, two flower and two foliage, Colonel W. S. Gill, C.B., of Dalhebity, Aberdeen (gr. Mr. Alex. Brebner), won handsomely. Included in the exhibit was a finely grown Disa grandiflora, which was greatly admired. Ferns formed a great display, and leading honours went to Dalhebity, Captain E. F. Lumsden, of Balmedie (gr. Mr. William Morrison), and Morkeu. Sir Thomas Jaffrey, of Edgehill (gr. Mr. James Cook), was also a prominent winner in the classes for Ferns. Pelargoniums were well shown, and here again Mr. Benzie of Morkeu was successful. Plants for dinner table decoration formed a pleasing feature, and of these Sir Thomas Jaffrey, Edgehill, had the best. In the classses for single and double Begonias, Mr. James Cook, of Enfield, led in fine style, as he also did for Gloxinias.

Cut Flowers.—There was no lack of evidence of the despoiling effects of the recent heavy rains in the exhibits of cut flowers, yet this division proved the most delightful and attractive of the whole show. For the best eighteen H.P. and H.T. Roses, chief honours including the Silver Challenge Cup, were won by Captain E. F. Lumsden with a capital entry. In the class for decorative Roses, at least four varieties, exhibition varieties excluded, and for six vases of Roses, distinct varieties, three blooms in each, Colonel W. S. Gill, was placed first, and he also took premier place for twelve cut trusses of Zonal Geraniums.

Collerette Dahlias from Grandholm House, Aberdeenshire (gr. Mr. C. Cox), and the twenty distinct varieties of cut flowers and fine foliage bedding plants, including annuals, each sort to be in a bunch, on a space not exceeding four feet by five feet, from the same gardens, were outstanding features. Hardy herbaceous flowers (twelve bunches) were finely shown by Captain Lumsden; whilst the Earl of Moray, Darnaway Castle, Forres (gr. Mr. A. S. Dow), showed the best twelve bunches of annuals. Begonias, both single and double, were greatly admired, the principal honour going to Enfield for double, and to the Gardens, Logie, Pitcaple, Aberdeenshire (gr. Mr. P. F. McQueen), for single blooms. The displays of Sweet Peas were remarkably good, and in the whole of the nine classes Mr. J. A. Grigor, Woodlands, Banff, dominated. His finest varieties were Royal Purple, Sybil Henshaw, Mrs. A. Hitchcock, Powerscourt, Gleneagles, Chieftain, Red Gauntlet, Mary Pickford, Pink Perfection and Picture. At the Glasgow and West of Scotland Sweet Pea Society's show Mr. Grigor secured no fewer than thirteen first prizes in twenty-one classes, a record of which any grower might be justly proud. At Aberdeen he cleared the boards. The Earl of Moray also showed some grand Sweet Peas.

Fruit.—The deteriorating effects of the season's unpropitious weather were very marked in this division; nevertheless, the display made was uncommonly good. For the best collection of hardy fruits, six dishes, not more than two dishes of any species (open), the honours went to Lord Sempill, Fintray House, Aberdeenshire (gr. Mr. W. D. Anderson), for a capital exhibit, and the second and third prizes were awarded to Mr. Norman Duncan, Johnston House, Aberdeen. The last-named also took chief honours for Gooseberries. The best Strawberries came from Woodthorpe Gardens, Murtle, Aberdeenshire (gr. Mr. George Tocher), and Mr. R. Duncan, Old Montrose, led for Cherries. The Earl of Moray had the best Raspberries, Plums and Red Currants. Black Currants, which suffered badly in the north-eastern district of Scotland this season, were well-shown by Mr. Alex. Ferguson, Castle Gardens, Ellon, Aberdeenshire. Grapes were shown well by Mr. William Grant, Crathes Castle Gardens, Mr. Benzie, and Lord Sempill. Leading places for Melons and Peaches went to The Firs, Murtle (gr. Mr. A. Murray). Mr. P. F. McQueen, Ellon Castle, showed the best Nectarines. Honeywood House, Aberdeenshire (gr. Mr. George Meldrum), excelled with dessert Apples, and Captain Lumsden, for culinary Apples.

Vegetables.—These are always exhibited well at Aberdeen, especially Potatos. The blue riband of this division was awarded to the best collection of vegetables, arranged on a table space four feet by three feet, and comprising eleven varieties, viz., Pea, Cabbage, Cauliflower, Potato, Turnip, Carrot, Onion, Parsley, Beetroot, Celery and Tomato, and it was worthily won by Mr. R. W. Smith, of Crowmallie, M.P. for Central Aberdeenshire (gr. Mr. James Mitchell). The second and third prize collections came from Logie and Old Montrose respectively. Mr. William Lawson, Cornhill, Aberdeen, was, as is his wont, a very prominent and successful prize winner in many of the Potato classes. Mr. J. A. Grigor, won first prizes for round white and round coloured Potatos, and also led for twelve pods of Broad Beans. Mr. James Cook, Colonel Gill, the Earl of Moray, Sir Thomas Jaffrey, and Mr. W. Mackinnon, The Firs, were all prominent prize winners in the vegetable classes.

As usual, a fine display was made in the nurserymen's and florists' classes, the chief honours going to Messrs. J. and R. Burns, Aberdeen, who, with the exception of the best thirty-six Rose blooms, the leading place for which was taken by Messrs. Adam and Craigmile Fernielea, Aberdeen, carried practically everything before them.

The exhibits by local nurserymen and seedsmen formed a very important feature of the show. Exhibits were staged by Messrs. Ben. Reid and Co., Messrs. W. Smith and Son, Messrs. Knowles and Sons, Mr. James Robertson, and Messrs. Adam and Craigmile, all of Aberdeen, while Messrs. Allwood Brothers contributed one of their noteworthy exhibits of Carnations.

The weather throughout the three days of the show was wonderfully good, the attendance of visitors much larger than last year.

BAKEWELL FLOWER SHOW.

The flower show held in connection with the seventy-fourth exhibition of the Bakewell Farmers Club, on August 4, attracted some important exhibits from nurserymen, and these trade shows, collectively, made a very imposing display. A number of classes was provided for local visitors, and these were well filled, but the great success of the exhibition resulted from the displays by traders.

Messrs. Sutton and Sons were awarded a Gold Medal for Sweet Peas and Gladioli, attractively arranged with Palms and other foliage plants; Messrs. James Carter and Co. were awarded a Gold Medal and a special trophy of Crown Derby ware for a remarkably fine display of vegetables flanked on either side with groups of Gladioli; Messrs. W. Wood and Son were also awarded a Gold Medal for horticultural sundries, tools, etc., and various beautiful flowering plants including alpines; Messrs. C. Engelmann Ltd., were also awarded a Gold Medal for one of their noteworthy exhibits of Carnations.

Other firms to which Gold Medals were awarded were Messrs. Alex. Dickson and Sons, for Roses; Messrs. Dobbie and Co., for Sweet Peas and Dahlias; Mr. J. C. Allgrove, for fruit trees in pots and about sixty varieties of gathered fruits; Messrs. Cypher and Sons, for fine foliage, stove and greenhouse plants, both in and out of flower; Messrs. Blackmore and Langdon, for Begonias; Messrs. J. Artindale and Son, for hardy herbaceous and bulbous flowers, this exhibit receiving in addition a special award of Crown Derby ware; Mr. E. Woolman, for Dahlias, Begonias and border Carnations; Messrs. Brooke Bray, Ltd., for floral designs; and Mr. T. Robinson, for Roses, this meritorious exhibit also receiving a special trophy in the form of Crown Derby ware.

Other exhibitors were Messrs. Dickson and Robinson, The Chalk Hill Nurseries, Messrs. W. Cutbush and Son, Messrs. Isaac House and Son, Messrs. Proctors, Messrs. J. Forbes, Ltd., Messrs. Dickson's Nurseries, Chester; Messrs. Dickson, Brown and Tait, and Mr. W. Sydenham, Melbourne, Derbyshire.

DUMBARTONSHIRE SWEET PEA.

Unfavourable weather experienced for a week previous to the show of this Society, which is held alternately at Dumbarton and Helensburgh, had a bad effect on the quality and number of the exhibits. Several exhibitors were compelled to cancel their entries.

In the open classes, Mr. J. A. Grigor, Banff, excelled in the classes for eighteen and twelve vases, but although the blooms were not lacking in size, they bore evidence of the untoward weather. Mr. George Ballingall, Dumbarton, was the most successful competitor in the gardeners' and amateurs' division; he won the Society's Cup with twelve vases, of which the varieties Olympia, Ivory Picture, Charming, Magnet, Youth and Powerscourt were best. He had the best trio of new varieties in Gleneagles, Olympia and Chieftain, and he also excelled with six particularly fine vases of Elegance, Charming, Ivory Picture, Mrs. Horace Wright, Olympia and Powerscourt.

For the second year in succession, the Amateurs' Cup was awarded to three vases staged by Mr. George Blackie, and it now becomes his property. It was a strong trio consisting of Royal Pink, Model and Royal Mauve, and the latter received an additional honour as the best vase in the amateurs' section. Other successful competitors were Messrs. James Maltman, Rhu; Mr. J. McGowan, Alexandria; Mr. Alex. Sutherland, Mr. T. W. Carrie and Mr. Frank Dumbar.

Roses were a small class, and here the principal prize winners were Mr. John Smellie, Helensburgh (six vases); Mr. James Jack (two vases, ramblers); Mr. William Holmes, Helensburgh (three vases); Mr. A. Borthwick, (pink and red); Mr. J. McRobbie, Mr. J. Bain and Mr. Charles Maclachlan. A bloom in Mr. Borthwick's vase of Earl Haig received the special prize offered for the best Rose in the show.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

There was a record attendance of 260 members at the outing on Saturday, the 13th inst., to Messrs. Austin and McAslan's nursery at Cathcart, when the Rose and Sweet Pea trials were the special attraction. The Sweet Pea trials are of a most comprehensive character, and in addition to testing the purity of the stocks they are intended to demonstrate the merits of autumn- and spring-sowing, and the three methods of pruning the plants, viz. on single stems, naturally and from seeds sown in the open ground in April. Altogether 140 varieties were sown in triplicate, and so far the Peas grown on the single stem system have given the finest blooms, while the naturally-grown flowers were produced in the greatest profusion.

The visitors were provided with voting cards, and with the object of stimulating interest in the trials, the firm offered prizes to competitors whose twelve Roses and twelve Sweet Peas approximated nearest to the popular votes. By this method two representative collections were obtained as follows :—

Roses :—Betty Uprichard, Angele Pernet, Shot Silk, Frau Karl Druschki, Etoile de Hollande, Mabel Morse, Ophelia, General McArthur, Caroline Testout, Los Angeles, Ivy May and Mrs. Henry Morse. Three competitors named ten of the successful dozen.

Sweet Peas :—Royal Pink, Picture (cream-pink); Powerscourt (lavender), Charming (cerise), Grenadier (scarlet), Model (white), Charity (crimson), Warrior (maroon), Youth (Picotee edge), Royal Purple, Blue Bird and Royal Sovereign (any other colour). One competitor succeeded in naming ten and five competitors nine of the successful twelve varieties. The visitors were entertained to tea by the firm

BANFFSHIRE.

August 17.—The annual show of the Banffshire Horticultural Society, recognised as one of the leading events of its kind in the north-east of Scotland, was held in the Princess Royal Park, Banff, on the above date. Lady Findlay of Aberlour, wife of the chief proprietor of the *Scotsman*, in a speech highly eulogistic of the Scottish gardener, his worth and work, performed the opening ceremony.

A survey of the exhibits showed there was not much evidence of the backward season, although, here and there, the deteriorating effects of the weather during April, May and June could be seen. There were 246 classes in all, seventy of which came under the heading professionals, although open to all-comers.

Pot plants formed an attractive feature, and here leading places were taken by Lady Nicholson of Eden, Banffshire (gr. Mr. James McLennan). It was in the cut flower classes, however, where competition was keenest, and especially for Sweet Peas.

The Silver Cup offered by the Society for twelve vases of Sweet Peas, distinct, was won by Mr. James McDonald, Cairnfield House Gardens, Buckie, for remarkably fine flowers. Prominent among the other winners for cut flowers were Mr. R. Paul, Duff House, Banff; Lessendrum House (gr. Mr. James Munro); Mr. A. Chalmers, Tillynaught; Lady Nicholson, Eden House; Mr. J. Findlay, Park, and Mr. W. M. Milne, Turriff.

Fruit was not extensively shown, but the few exhibited were good. The finest were from the gardens of Cairnfield House, Eden House, Gellymill (gr. Mr. John Fraser), Mountblairy House (gr. Mr. W. A. Munro), and the Fife Arms Hotel, Banff (gr. Mr. A. Craib).

Vegetables formed a strong feature, both in the professional and amateur classes. In the former clasess capital produce was shown from the gardens at Kingswell, Banff (gr. Mr. John Bruce); Eden House, Cairnfield House, Tillynaught House, Mountblairy House, Bogmuchals (gr. Mr. G. S. Aitken), and Lessendrum House. In all respects the show was a remarkably successful one; the general standard of quality was exceedingly high, the attendance of visitors good, and those who assisted to this end deserve hearty congratulations.

ROYAL HORTICULTURAL.

Awards to Daffodils.

The following awards have been made to the undermentioned Daffodils by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

Division 1 (a).—*Sulphur*, sent by Mr. P. D. Williams.

Division 2 (a).—*Grenade**, sent by Mr. W. B. Cranfield.

Division 2 (b).—**H. M. Queen Alexandra*, sent by Messrs. W. A. Watts.

Division 3 (a).—*Treskerby*†*, sent by Mr. P. D. Williams.

Division 3 (b).—*Sunrise*†, sent by Messrs. W. A. Watts.

Division 4 (a).—*Duncan*†*, sent by Mr. P. D. Williams; and *Mavourneen*, sent by Messrs. W. A. Watts.

HIGHLY COMMENDED.

Division 1 (a).—Refined Gold, sent by Messrs. J. R. Pearson and Sons; A. W. Tait, sent by Messrs. Barr and Sons; and Florists' Delight*, sent by Mr. G. L. Wilson.

Division 2 (a).—Egrin*, sent by Messrs. W. A. Watts; Bonaparte, sent by Messrs. Barr and Sons; and Jubilant*†, sent by Mr. P. D. Williams.

Division 2 (b).—Amber, sent by Mr. W. B. Cranfield.

Division 3 (a).—Nanny Nunn, sent by Messrs. Barr and Sons.

Division 4 (a).—Norah Pearson,sent by Messrs. J. R. Pearson and Sons.

Division 4 (b).—St. Ilario, sent by Messrs. J. R. Pearson and Sons.

Division 5 (a).—Venetia, sent by Mr. W. B. Cranfield.

Division 8.—Glorious†*, sent by Mr. J. Richardson; and Chineta, sent by Mr. L. de Rothschild.

Division 10.—Double Cheerfulness, sent by Messrs. J. B. Van der Schoot.

COMMENDED.

Division 1 (a).—Harvester, sent by Mr. P. D. Williams; Siegfried, sent by Messrs. Barr and Sons.

Division 1 (b).—Mendip, sent by Messrs. H. Chapman, Ltd.; and Parth, sent by Mr. P. D. Williams.

Division 1 (c).—White Conqueror, sent by Mr. G. L. Wilson; Hawthorn, sent by Messrs. H. Chapman, Ltd.

Division 2 (a).—Breila*, sent by Messrs. W. A. Watts; and Yellow Standard*, sent by Messrs. Barr and Sons.

Division 2 (b).—Steadfast, sent by Messrs. J. R. Pearson and Sons.

Division 3 (a).—Owen, sent by Mr. W. A. Watts.

Division 4 (a).—Tunis*, sent by Mr. P. D. Williams; and Vega*, sent by Messrs. J. R. Pearson and Sons.

AWARD OF MERIT.

Division 6.—*Beryl**, sent by Mr. P. D. Williams.

Obituary.

Arthur Garnet.—It is with the deepest regret we learn of the tragic death of Mr. Arthur Garnet who was associated with Kew Gardens for many years, where he worked as an assistant in the Curator's office with the late Mr. William Watson. His death occurred through drowning whilst bathing off the Dorset coast, near Bridgport, on the 12th inst. When he left Kew in 1915, he settled in Tasmania as a fruit farmer, but he only remained in that island eight years. He was a son of the late Richard Garnet, Librarian to the British Museum, and was widely known in literary as in gardening circles.

Alexander Hill Gray.—This veteran rosarian died at his home, Beaulieu, New Bridge Hill, Bath, on the 20th inst., aged ninety-one. After a life of travel and adventure he settled at Beaulieu and engaged in the growing of Roses, in which he was very successful, especially with Tea and Noisette varieties. He won the Challenge Trophy of the National Rose Society, of which he was a Vice-President, offered for Tea and Noisette varieties, on many occasions. The beautiful Rose named after him by Messrs. Alex. Dickson and Sons, is a favourite Tea variety, and will serve to perpetuate his memory as a rosarian.

ANSWERS TO CORRESPONDENTS.

Atirrhinums Diseased.—*M. F. B.* The fungus attacking your Antirrhinums is Cercosporella Antirrhini, which was described in *The Gardeners' Chronicle*, Vol. LXVIII, 1920, page 158 and in Vol. LXXVI, 1924, page 150. It is a most destructive disease of the "Shot-hole" type, and is greatly in evidence during cool summers, but not nearly so prevalent in hot summers. inasmuch as a comparatively low temperature is needed for the germination of the spores. Early spraying with a fungicide is recommended as a preventive measure. Diseased plants should be burned.

Spores of Potato Blight.—*C. A.* The spores of the late blight of the Potato (Phytophthora infestans) are very short lived and cannot pass the winter anywhere. The near relatives of this fungus produce two kinds of spores, namely, conidia and oosperms. The Potato disease produces only conidia, which are spores that must be able to grow quickly (say within a few days) or die. Oosperms or resting spores, are capable of resting through the winter and growing again in spring. The Potato disease does not produce these, or they are so rare as to be negligible. The conidia, or short-lived spores, are produced in myriads upon the leaves and enter the latter by the stomata or small openings, or they can penetrate the skin. When once inside the leaf they grow into long threads (mycelium) that rapidly pass through the leaves, and down the stems into the tubers. Patches of the pale brown disease may be found in the centre of Potato tubers, and these have evidently come through the stem. Other tubers may be found with broad patches of the disease directly under the skin. The disease in this case results from spores which have fallen on the soil and been carried down directly to the tubers by rain. The spores (conidia) germinate and grow through the skin of the Potato. Many diseased Potatos are planted in spring and the mycelium or threads of the fungus commence to grow up the stem as that develops, and when the temperature has risen sufficiently high, and wet weather occurs, the disease breaks out as rapidly as ever. Thus the disease is carried through the winter in the living tubers, and possibly also in the dead haulm, which should, therefore be burnt. Disease in the centre of tubers cannot be detected at planting time.

Communications Received.—Altho.—A. R.—P. D.—R. L. B.—T. H.—T. S.—L. S.G. D.—A. S.—F. L.—R. W. R.—A. H. G.—G. F. W.—J. M.—G. J.—A. O.—H. V. W.—A. D. B.—T. H. E., New York.—E. A. B.—W. L. P.—A. A.—H. F.

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* For rock garden. † Recommended for market.

MARKETS.

COVENT GARDEN, Tuesday, August 23rd, 1927.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–12 0
—elegans	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz....	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray 12's, 15's	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink	18 0–21 0
—yellow	12 0–18 0
—bronze	15 0–18 0
Crotons, doz....	30 0–45 0
Cyrtomiums	10 0–25 0
Fuchsias, 48's, per doz.	12 0–15 0
Marguerites, 48's, per doz.	12 0–15 0
Nephrolepis in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Roses, Polyantha, 48's, per doz....	15 0–18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz., bun.	9 0–12 0
—cuneatum, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—2 6
med. sprays	1 6—2 6
short ,,	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. ,,	1 0—1 6
short ,,	0 6—1 9
Asters, white, per doz. bun.	4 0—8 0
—coloured, per doz. bun.	4 0—8 0
—single, coloured, per doz. bun.	3 0—4 0
—single, various, per doz. bun.	3 0—4 0
Carnations, per doz. blooms	1 3—2 0
Chrysanthemum Sanctity, per doz. blooms	2 6—3 6
—Mrs. J. Pearson, per doz. bun....	5 0–10 0
—white Duchess, per doz. blooms	5 0—7 0
—yellow, per doz. blooms	2 6—4 0
—bronze, per doz. blooms	1 6—2 6
—spray, pink, per doz. bun.	9 0–10 0
—spray yellow, per doz. bun.	10 0–12 0
—spray white, per doz. bun.	8 0—9 0
Coreopsis, per doz. bun.	1 0—1 6
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz.	1 9—2 6
Daisies, Shasta, large, doz. bun.	2 6—3 0
Delphinium, blue, per doz. bun.	6 0—9 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	9 0–12 0
Gaillardia, per doz. bun.	2 0—2 6
Gardenias, per doz. blooms	5 0—7 0
Gladiolus, giant varieties, per doz. spikes—	
—pink shades...	1 0—1 6
—scarlet	1 6—2 6
—white	1 6—2 0
Gypsophila paniculata, double, per doz. bun.	9 0–12 0
Heather, white, per doz. bun.	4 0—6 0
Lapagerias, per doz. blooms	2 6—3 6
Larkspur, various, per bun.	4 0—5 0
Lilium speciosum album, per bun....	3 6—4 0
—short, per doz.	3 6—4 0
—rubrum, long, per bun.	3 6—4 0
—short, per doz.	1 6—2 0
—longiflorum, long, per doz.	2 6—3 0
—short, doz. blooms	3 0—3 6
Lily-of-the-Valley, per doz. bun.	24 0–30 0
Marigolds, per doz. bun.	3 0—4 0
Montbretia, per doz. bun.	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas	36 0–48 0
—Cypripediums	6 0—8 0
Physalis, per doz. bun....	10 0–12 0
Roses, per doz. blooms—	
—Columbia	3 0—4 0
—Richmond	1 6—2 6
—Madame Butterfly	1 6—2 6
—Golden Ophelia	1 6—2 6
—Mrs. Aaron Ward	1 0—1 6
—Madame Abel Chatenay	1 6—2 0
—Hoosier Beauty	2 6—4 0
—Liberty	1 6—2 6
—Molly Sharman Crawford	1 6—2 6
—Premier	— 3 0
Smilax, per doz. trails	3 6—4 6
Statice sinuata, mauve, per doz. bun.	6 0–10 0
—latifolia, per doz. bun.	6 0—8 0
Scabiosa caucasica, per doz. bun.	4 0—5 0
Stephanotis, per 72 pips	2 6—3 0
Stock, per doz. bun.—	
—double, white	5 0—9 0
— —mauve	6 0—9 0
— —pink	6 0—9 0
Sweet Sultans, white, per doz. bun....	4 0—5 0
—mauve, per doz....	4 0—5 0

Remarks.—Chrysanthemums show a gradual improvement in quality and are becoming more attractive. A few boxes of Roi d'Blanc have been on sale during the past week, also some disbudded blooms of Mercedes (yellow) and Holicot Yellow. Of bunch blooms, bronze sorts are the most plentiful, the varieties Phoenix and Mrs. J. Pearson arriving in good condition. The yellow sorts include Horace Martin. All outdoor blooms have suffered from the heavy rains, and Asters and Stocks are arriving in a very poor and damaged condition. Prices for Carnations and Roses had a tendency to harden this morning, the former ranging from 9d. to 3s. 6d. per dozen. Of Roses, Madame Butterfly, Ophelia, Golden Ophelia Roselandia and Madame Abel Chatenay are the best sorts available at the present time. The newest subjects in this department are single Asters and Physalis. With the exception of Smilax, the quantities of all foliage exceeds the demand.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beets, New, per doz. bun.	2 6—3 0
Cabbage, per doz....	1 3—1 6
Carrots, new	3 0—4 0
Cucumbers, doz.	2 6—3 0
—Flats, 36's, 42's	12 0–16 0
Aubergines, per doz....	2 0—2 6
Leeks, per doz.	3 0—4 0
Lettuce, round, per doz.	0 9—1 0
—long	1 0—2 0
Mint, per doz....	1 6—2 0
Marrows, per tally...	10 0–12 6
Mushrooms—	
—cups...	2 6—3 0
—broilers	1 6—2 0
Onions—	
Egyptian	11 0–13 0
—Dutch	8 0–10 0
Parsnips, per cwt.	4 0—4 6
Peas, per bushel	3 0—8 0
Potatos—	
English	5 0—6 0
Radishes, per doz.	1 0—2 0
Savoys, per tally...	7 6–12 6
Tomatos, English—	
—pink...	3 6—5 6
—pink and white	3 6—5 0
—white	2 6—4 0
—blue	2 6—3 6
—Guernsey	2 6—3 6
—Dutch	2 0—3 0
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Beauty of Bath	3 0—6 0
—Gladstone, ½-sieve	1 6—3 0
—Grenadier, Best, per bush.	4 0—6 0
—Other cookers	3 0—5 0
—Worcester Pearmain, ½ sieve	3 0—8 0
—Miller's Seedling, ½ sieve	3 0—8 0
Apples, New Zealand—	
—Sturmer Pippin	15 0–20 0
—Portugal, per case	6 0—7 0
Bananas	13 0–22 0
Figs, per doz....	4 0–12 0
Grape Fruit—per case	35 0–42 6
Grapes, English	
—Colmar	2 0—3 0
—Black Hamburgh, per lb.	1 6—2 0
Grapes, Alicante	1 6—2 0
—Gros Maroc...	1 6—3 0
—Muscat	2 6—6 0
—Canon Hall...	2 6—6 0
Lemons, Messina Boxes	16 0–25 0
—Naples, per case......	25 0–30 0
Melons, each—	
—English and Guernsey	2 0—8 0
Canteloupe each	2 0–10 0
Oranges, per case—	
—Cape Navel...	20 0–25 0
—Seedling	18 0–20 0
Nectarines, doz.	4 0–12 0
Peaches, per doz....	6 0–18 0
Pears, French—Willams's Bon Chrêtian, 48's	4 0—6 0
—crates (64–72)	10 0–11 0
Pines, case	21 0–40 0
Plums—	
—Czar	6 0—8 0
—French	4 0—6 0
—Victoria	12 0–16 0
—Gage	8 0–16 0
—Clapp's Favourite	6 0—8 0
Belgian Pears, crate	3 0—5 0

Remarks.—Conditions in the fruit trade during the past week have been anything but good, except for isolated lines in the section handling fruit of the highest grade. Practically all kinds of Plums have sold well during the past week but supplies have not been heavy. The variety Czar is finishing at a good price. Victoria has sold particularly well, and the few English Gages available are finding a ready market. English Apples are, at the best, only a moderate trade; a fair demand rules for well-coloured fruits of Worcester Pearmain and a quiet demand for well graded, large cookers, other than the above-mentioned Apples are a very bad business. Clean, sizeable Williams's Bon Chrêtien Pears from the Continent are selling freely and making a fair price but here again second class fruits are not wanted. The Tomato trade is showing signs of some improvement, mainly due to reduced quantities, owing to lack of sunshine. Cucumbers are plentiful and cheap, unduly so for the time of year. Choice fruits, such as Peaches, Grapes, Nectarines and Figs are a quiet but steady trade. Mushrooms are not plentiful and prices are holding up fairly well. Peas are selling satisfactorily but their prices are on the low side. French and Runner Beans, Marrows, and most other vegetables are abundant and cheap. It is probable that every section of the trade would benefit from a spell of fine weather.

GLASGOW.

Business in the cut flower department was again quiet last week, and prices continued cheap with the exception of Chrysanthemums. Gladioli were difficult to sell and only made from 6d. to 1s. 6d. per dozen spikes. Carnations were worth from 1s. to 1s. 6d. per dozen; pink Roses, 1s. to 2s., and white Roses, 1s. to 1s. 6d.; Sweet Peas and Marguerites realised 1d. and 2d. per bunch; Stocks, 4d. to 6d.; Asters, 2d. to 4d.; Lilium rubrum and L. longiflorum (Harrissii), 2s. to 2s. 6d. per dozen; and Asparagus, 9d. to 1s. per bunch. Early Chrysanthemums wzre more plentiful; Constance sold at 1s. to 1s. 6d. (6's) No. 1 White at 1s. to 1s. 3d.; Elsie Heady and Holicot Yellow, at 1s. to 1s. 2d.; Phoenix at 1s. to 1s. 6d. per dozen, while small sprays realised 2d. to 6d. per bunch.

The volume of business done in the fruit market was quite up to the average at this season. The prices of Strawberries fluctuated between 6d. and 1s. per lb.; Raspberries, 6d. to 9d.; Black Currants, 10d. and Red Currants, 3d. Gooseberries realised 2s. to 2s. 6d. per sieve; Victoria Plums, 14s. to 16s.; home-grown Peaches, 4s. to 6s. per dozen; and Muscat Grapes, 4s. per lb. English Apples (Lord Derby and Warner's King) sold for 9s. 6d. per bushel; Keswick Codlin, 24s. per cwt.; Belgian Apples, 11s. 6d. to 14s. per keg; Belgian Wine Pears, 10s. to 12s. 6d. per keg; Clapp's Favourite. 8s. to 9s.; Cherry Pears, 6s. 6d; double Philips, 5s. 6d. to 6s. 6d.; French Williams's Bon Chrêtien, 16s. per crate; and Damsons, 13s. per half sieve. Prices of South African Oranges were unchanged.

In the vegetable section prices for Scotch Tomatos were firm at 9d. per lb.; Dutch Tomatos made 2s. 3d. to 3s. per box. Other prices were: Celery, 4s. per box; Cauliflowers, 5s. to 7s. per dozen; Lettuces, 1s. to 1s. 6d. per dozen; Cucumbers, 4s. to 6s, per dozen; Peas, 12s. to 14s. per pot; and locally-grown French Beans, 8d. per lb.

THE WEATHER IN JULY.

This was a very remarkable month of watery, sky-haziness, and extremely light south-easterly winds, instead of the usual fairly strong westerly breezes and dark blue skies, characteristic of July at Southport. As usual, the place escaped all serious thunderstorms, and, indeed, the rainfall did not quite equal the average, being only 2·88 inches, instead of a normal 3·02 inches. But humidity was very high, and the sun frequently only dispersed the clouds and mist for a few hours during the afternoon. Before noon, only 50 hours of sunshine were recorded, but, fortunately, after noon, 92 hours were experienced, the local sea-breeze often then prevailing. Much the driest time was from 2 p.m. to 6 p.m. (G.M.T.). Soon after then gloom or mist returned, and the nights and mornings were singularly cloudy and dark. Evaporation was much reduced. The moderate rainfall, too, was distributed over 19 days, or five more than the average number. The mean temperature was 61°, or 1½° above normal; but the highest maximum reading was only 73°. The deficiency of sunshine was 61 hours, an amount never approached in any July—except that of the notable volcanic-dust summer of 1912—but then both mornings and afternoons were similarly affected, and the haze was strongly coloured—conditions entirely different to those experienced during the month under review. *Joseph Baxendell, Borough Meteorologist, The Fernley Observatory, Southport.*

THE LATEST TRADE MARKS.

This list of Trade Marks, of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of His Majesty's Stationery Office.

MITHAYRION.

479,663.—Agricultural and Horticultural Machinery and Parts of such Machinery.—Ernest Everard Gates, Old Buckenham Hall, Old Buckenham, near Norwich, Norfolk, and 8a, Carlos Place, London, W.1. August 10.

MITHAYRION.

479,668.—Cutlery and Edge Tools, Ernest Everard Gates, Old Buckenham Hall, Old Buckenham, near Norwich, Norfolk, and 8a, Carlos Place, London, W.1.—August 10.

BEN HUR.

481,452.—Cutlery and Edge Tools.—Hugo Herkenrath, 16, Moltkestrasse, Merscheid, (Rheinland), Germany. August 10.

MITHAYRION.

480,440.—Seeds for Agricultural and Horticultural purposes.—Ernest Everard Gates, Old Buckenham Hall, Old Buckenham, near Norwich, Norfolk, and 8a, Carlos Place, London, W.1. August 10.

CATALOGUES RECEIVED.

Bulbs.

Chaplin Bros., Ltd., Royal Nurseries, Waltham Cross, Herts.
Sutton and Sons, Reading.
E. P. Dixon and Sons, Ltd., Hull.
D. G. Purdie, 6, Waterloo Street, Glasgow.
Barr and Sons, 11, King Street, Covent Garden, W.C.2.
Fisher, Son and Sibray, Ltd., Handsworth, Sheffield.
Alfred Dawkins, 408, King's Road, Chelsea, S.W.10.
R. Wallace and Co., Ltd., The Old Gardens, Tunbridge Wells.

Chaplin Bros., Ltd., Waltham Cross, Herts.—Roses, fruit trees, etc.
John Waterer, Sons and Crisp, Ltd., Twyford, Berks.—Rhododendrons, Azaleas, etc.
Andrew Ireland and Hitchcock, Marks Tey, Essex.—Sweet Peas and Bulbs.

GARDENING APPOINTMENT.

Mr. F. T. Street, for the past seven years as gardener to C. Shied, Esq., Leybourne Grange, Malling, Kent, as gardener to Mrs. Emile Mond, Grey Friars, Storrington, near Pulborough, Sussex.

THE
Gardeners' Chronicle
No. 2123.—*SATURDAY, SEPTEMBER* 3, 1927

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 58.7°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 31, 10 a.m. Bar. 30.3. Temp. 64°. Weather, Dull.

The Winter Killing of Market Garden Crops.

A VERY useful example of the successful application of scientific knowledge to a practical cultural problem is provided by Mr. T. Wallace's account* of his treatment of market gardens in the neighbourhood of Bristol, in which crops of winter vegetables were suffering from winter-killing. The method of cropping practised in these gardens is to grow Celery, Marrows and plants of the Cabbage tribe during the summer and to follow them with Onions, Lettuces and spring Cabbages for the winter months. In many of the older gardens in which this system of cropping is practised it was found that the winter crops suffered severely during spells of hard weather; so serious, indeed, were the losses that growers were considering the abandonment of their gardens and removal to fresh ground where, as observation shows, the winter-killing is far less severe. Examination of the plots on which the winter crops were in poor health revealed the fact that there was something radically wrong with the nutrition of the plants. They lacked a vigorous root-system and so marked was the lack that the poorer of the plants were easily pulled out of the ground. Other symptoms, even more significant, were a scorched appearance of the edges of the leaves of Cabbages and Lettuces, and a dying back of the tips of the leaves of Onions. This state of affairs was observed on soils of widely different geological origin; for example, soils derived from the clays of the Lower Lias were no better than those of Sandstone origin. The symptoms just described would suggest to anyone conversant with the effects of manurial deficiency on plant growth that the cause of the trouble was to be sought in this direction. Mr. Wallace was, indeed, the very man to undertake this investigation, for his well-known and valuable observations on fruit trees had already convinced him that where the relation between soil nitrogen and potash is too wide—that is, where there is a deficiency of potash in relation to nitrogen—plants suffer from leaf scorch, and a poorly-developed root system. So marked, indeed, is the effect of this lack of balance between these two plant foods that the plants subjected to it may actually grow worse than those to which no fertilisers of any kind have been applied. Confirmation of this view of the origin of the trouble was obtained from enquiry into the method of manuring practised by the market growers. The enquiry elicited the fact that it is the practice of the growers to give heavy dressings of stable manure to the summer crops. So much as forty loads to the acre, and in many cases considerably more, were applied. It is evident that dressings so large as these continued over a period of years might lead to a large accumulation of nitrogen in the soil, and that if no steps were taken to replace the potash and phosphates removed from the soil by the crops, a serious lack of balance between nitrogen and other nutrients would be established. Analysis of the soil showed, in fact, that although there was a large amount of lime (5·85 per cent.) present in the soil, the amount of available potash was extremely low, 0·0410 per cent., whereas phosphates appeared to be present in fairly adequate quantity (0·1838 per cent.). The remedial measure was therefore clearly indicated, namely, a liberal application of a potassic fertiliser. Accordingly, a dressing of sulphate of potash at the rate of 3 cwts. per acre was applied to part of one of the suffering gardens in which Lettuces were grown, and a similar dressing was given later on—at the time of planting Onions. The results were eminently satisfactory and entirely convincing. On the treated plot there were none of those fatal symptoms of poor root development and withered leaf-tip which characterised the plants of the untreated plots, and it is therefore to be concluded that the failure of the market garden crops through winter-killing was due to lack of potash in the soil, or rather to an improper balance between the amounts of nitrogen and potash therein. The experiment has wide bearings. Too many growers pin their faith too absolutely to farmyard manure. Best of all fertilisers, farmyard manure is poor in potash and phosphates and must be supplemented by dressings of these fertilisers. In the case in point it was not the large amount of nitrogen in itself which was doing the harm, but rather it was that with insufficiency of potash the nitrogen of the manure was useless and even harmful. Yet when potash was supplied, this nitrogen, although present in such large amounts, was no longer harmful but beneficial. The moral, therefore, is use all the farmyard manure that can be obtained, but see to it that there is added to it a sufficiency of potash and also of phosphatic fertilisers. The good gardener makes ample use of basic slag and of potash salts in exploiting and supplementing the fertilizing virtues of the manure heap.

Illustrated Guide to Kew.—A new edition of the *Illustrated Guide to the Royal Botanic Gardens, Kew*, has been published by H.M. Stationery Office. The book is printed on art paper in double-toned ink, with very pleasing results. The opportunity has been taken to change several of the full page illustrations and a number of small pictures have been inserted in the text. These latter show plants of particular interest, such as Amorphophallus Titanum, the giant Aroid from Sumatra, which flowered at Kew last year; and Angraecum sesquipedale, an Orchid with a nectary up to one-and-a-half foot in length. Other interesting subjects illustrated include Strelitzia Reginae, Nepenthes mixta, Sarracenia flava and Callistemon citrinus. A useful index has been added. The book can be obtained from the Royal Botanic Gardens, Kew, price 1/– (by post, 1/2½d.), and is excellent value for the price, as, in addition to the thirty full-page views—each seven inches by four inches—it contains a key plan of the gardens, and a great deal of historical information concerning this great national horticultural and botanical institution.

Memorial to Canon H. Coste.—Time and again clergymen have combined the cure of souls with a passion for botany or horticulture. The late Canon Hippolyte Coste was one of many examples of such a combination of interests. He died in 1924, when sixty-six years of age and although honorary canon of Rodez, the whole of his life as a priest was spent in the little French village of St. Paul des Fonts, in Languedoc. Even as a lad he was interested in the flora of his district, and before entering the Petit Seminaire he had made a collection of three hundred specimens of native plants. In later life he devoted his holidays and other spare time to the collection and determination of native plants, and, with the approval of his Bishop and encouraged by scientific societies, he extended his botanical researches into the Pyrenees, the Alps and Corsica. He accumulated a vast amount of material and the herbarium he bequeathed to the Society of Literature and Science of Aveyron contained nearly 20,000 specimens, collected, classified and named by himself, with the place, date and altitude at which each specimen was found. His fine herbarium and wide knowledge formed an excellent foundation for his life work—the publication of *Flore descriptive et illustrée de la France la Corse et des contrées limitrophes.* This great work in three volumes contains over 5,000 descriptions and 4,354 illustrations of plants, and was published in Paris in 1900-1. A monument to the memory of this savant has been erected in the village of St. Paul des Fonts, and, at its dedication, the Mayor, the Bishop of Rodez and M. Emile Borel, representing the Academy of Science, paid tribute to the fine botanical work carried out by Canon Coste.

National Rose Society's Autumn Show.—The Society's Great Autumn Show will be held again this year in the Royal Horticultural Hall, Vincent Square, the dates fixed for the exhibition being Friday and Saturday, September 9 and 10. This annual exhibition is invariably of great interest, and usually extensive. We understand that competition in the artistic classes is likely to be very keen this year, and some very attractive exhibits are promised.

Uvedale's Enfield Cedar.—A very interesting horticultural antiquity is fated, it appears, to go the way of so many others—the old Cedar of Lebanon planted by Dr. Robert Uvedale in the garden of Enfield Palace is to be cleared away, together with the building, and the site is to be built over. The tree is still standing, and though it looks rather ill and has to be supported in several places, it is alive, and has a very picturesque appearance seen against the red-tiled roof of the old Palace. The house and garden are very much out of repair, and the house has been condemned as unsafe. It has been used until recently as the home of the local Conservative Club, but the Club is to build new premises elsewhere, and the Palace, which occupies what is now valuable ground in the heart of the town, has been marked for destruction. The garden at the back, in which the Cedar is planted, is still fairly open, but in the front two large buildings have already been erected in such a way as almost to conceal the Palace, which is reached by a narrow pathway from the High Street. Part of the building dates back to the time of Edward VI, and is of the characteristic Tudor brick. Many efforts have been made to save this old building and the Cedar from destruction by a small group of public spirited local antiquaries, but their efforts have, unfortunately, not availed, and unless energetic action is immediately taken, their days are numbered. It seems excessively regrettable that this should be so, as the original portion of the house, and the garden containing the Cedar, could be repaired and kept in order for a comparatively trifling amount. It is probable that the first Sweet Peas sent to England were grown in this garden, as it is on record that Franciscus Cupani sent seeds to Dr. Uvedale in 1689, and the resulting plants flowered in the following year.

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* An Experiment on the Winter Killing of Vegetable Crops in Market Gardens, by T. Wallace. Annual *Report* of the Agricultural and Horticultural Research Station, Long Ashton, Bristol, 1926.

State Experiment Station in Hessen.—The Hesse (Germany) Chamber of Agriculture has erected several forcing houses for Tomatos and Cucumbers, which will be in use during the present year. The houses have been erected on the Chamber's experimental grounds at Gr.-Umstadt, Odenwald, and the Director is Herr Reussrath; in addition to Tomatos and Cucumbers, Grapes are to be grown. The demonstrations made at the Experiment Station are found very helpful to the growers in the district, and play no small part in the extension of the trade.

Home Aquarium Exhibition.—The British Aquarists' Association is holding a home-aquarium exhibition at Chelsea Polytechnic from September 6 to 10. The show has been organised with a view to demonstrating the value of aquatic plants in maintaining a "balanced" aquarium (independent of change of water or artificial aeration). The exhibits will include some new cultivated varieties of wild aquatics which have been specially raised with a view to their suitability for aquaria. Full particulars concerning the exhibition may be obtained from the Hon. Secretary, Show Committee: Mr. A. W. Croser, 12, Winkfield Road, Wood Green, N.

Imported Apples and Pears.—It is announced that applications for an Order in Council under the Merchandise Marks Act, 1926, to require the marking of imported fresh Apples and Pears, have been referred, for enquiry, to the Standing Committee set up under the Act by the Minister of Agriculture and Fisheries, the Secretary of State for the Home Department, and the Secretary of State for Scotland, acting jointly. A further notice will be issued with regard to the date of the enquiry. Any communications with regard to the matter should be addressed to Mr. H. J. Johns, Secretary of the Standing Committee, 10, Whitehall Place, London, S.W.1.

British Mycological Society's Annual Meeting and Foray.—Aviemore, Inverness-shire, is the place fixed for the annual meeting of the British Mycological Society, and the centre for the Society's thirty-first Autumn Fungus Foray. The Annual Meeting will take place on Wednesday, September 14, at 8.45 p.m. For members who arrive at Aviemore in time, a special excursion will be arranged for Monday, September 12, to be followed in the evening by a meeting of the Council. On Tuesday, September 13, Rothiemurchus Forest will be visited, and in the evening Dr. E. J. Butler will give his presidential address. Rothiemurchus Forest will be visited again on Wednesday, September 14, and on the following day, after a visit to Abernethy Forest, Dr. Malcolm Wilson will lecture on the "Life History of Milesina Kriegeriana and its occurrence in Britain," and Dr. G. G. Hahn will discuss "Species of Phomopsis occurring on Conifers and their distinction in culture." On Friday, September 16, there will be an excursion to the woods between Aviemore and Carr Bridge; during the evening Miss M. Wilson will lecture on "The Dutch Elm Disease," and Mr. Carlton Rea will make observations on "Fungi found during the Foray."

Professor A. G. Tansley, F.R.S.—The recent appointment of Mr. A. G. Tansley, M.A., F.R.S., to the Chair of Botany in the University of Oxford was yet another instance of the older University, with its imposing list of professors of botany from the time of Robert Morison in 1669, going to the sister University for its head of the Department of Botany. The present and the last two professors have all been Cambridge men. Sir Frederick Keeble followed Professor Vines in 1920, and Mr. Tansley has now followed Sir Frederick Keeble. It was William Sherard, sometime Consul at Smyrna, who endowed the Chair of Botany at Oxford (1728), and left his large herbarium and MS. of the *Pinax* to the University. Dillenius, who died in 1747, was the first Sherardian Professor, and his herbaria at Oxford include type-specimens of the plants mentioned in the third edition of Ray's *Synopsis*, 1724. John Sibthorp was Professor 1784-95, and the Department not only possesses the type plants of the extremely valuable *Flora Graeca*, but numerous exquisite, original water-colour drawings by Ferdinand Bauer, which illustrated that sumptuous work. These paintings are as scientifically accurate as they are artistic. But it was Henry B. Fielding who, in 1851, bequeathed his herbarium of 80,000 specimens to Oxford and endowed the Fielding Curatorship, which has been held since 1895 by Dr. G. C. Druce. Professor Tansley has been in charge of the Department of Botany at Oxford since the beginning of February, and is a Professorial Fellow of Magdalen College. As a leader in the comparatively new science of Ecology, he is widely known, both in Europe and America; and he is specially anxious to co-operate so fully as opportunity permits, both in teaching and research, with the kindred departments of Forestry, Agriculture and Zoology. *Types of British Vegetation*, 1911, which Professor Tansley edited and largely contributed to, soon went out of print, and it is doubtful if any twentieth century botanical work published in this country has risen so much in price. In 1923 there appeared *Practical Plant Ecology*, a little work designed as a guide for British students to the practical study of vegetation in the field. In his *Elements of Plant Biology*, published in 1922, the new Professor has embodied his ideas of the nature of the instruction that should be given in the science of plants to medical students and others who do not contemplate botany as a career. The general biological aspects of the subject and the physical and chemical foundations are specially emphasised. Of a man who edits both *The New Phytologist* and *The Journal of Ecology*, who founded the British Vegetation Committee (later developed into the British Ecological Society), who initiated the International Phytogeographical Excursions and conducted the first excursion through the British Isles in 1911, who has travelled widely in Europe, Ceylon, Malaya, Egypt, Algeria and North America, and held first the Assistant Professorship in Botany at University College, London (1893-1906), and then a University Lectureship in Botany at Cambridge, it need not be mentioned that he has had an extremely energetic and busy life. Professor Tansley's latest work is the editing, jointly with the Assistant Director of Kew, of a book on *Aims and Methods in the Study of Vegetation*, intended to stimulate and promote investigation of the natural vegetation of the Empire. Arthur George Tansley was born in 1871, and is the son of the late George Tansley, M.A., of the Working Men's College, then in Great Ormond Street, of which he was a mainstay for more than forty years. In early boyhood the son was interested in field botany by a wonderful old amateur botanist, Alfred Grugeon, of that College, who was by trade a wood-turner. Tansley then went to a private school at Worthing, where there was a master who was a field naturalist. This was the Rev. J. Harvey Bloom, since known for his sound archaeological work. Thence to Highgate Grammar School, whose head master wanted him to go to Oxford and study classics; but the lad insisted on leaving at seventeen in order to work at science, the school facilities for which were very poor. So he went to the University College, London, 1889-90, and Trinity College, Cambridge, 1890-93. In 1893, before he took his degree, Professor F. W. Oliver offered him an Assistantship in Botany at University College, and he was there in that capacity from 1893 to 1906, when he was appointed to the University Lectureship at Cambridge on Professor Seward's succession to the Chair of Botany. Professor Tansley's main research up to 1908 was in plant anatomy, and his first important publication was on the evolution of the Filicinean Vascular System. In 1923 he was President of Section K (Botany) of the British Association. On the Council of the Society for the Promotion of Nature Reserves Professor Tansley has been actively interested in the acquisition of suitable areas for protection by both this Society and the National Trust. The photograph we give shows him investigating the vegetation and other physical features of the Sharpham Moor Plot, near Glastonbury. Had it not been for Professor Tansley's keenness, encouragement and financial aid, this little enclosure of peat would not have been acquired for experimental purposes, and a Sedge (Carex evoluta) not known to grow elsewhere in the British Isles would by this time have been exterminated by peat-cutting. From what has been written, it is only to be expected that Professor Tansley should hold broad opinions, and be catholic in his outlook. A great educationist, terse in style, lucid in exposition, and quick in making decisions, he is sympathetic with all genuine efforts to do good work in every branch of botany, inspiring confidence and giving encouragement to others, without suffering fools more gladly than they deserve. May Oxford gain what Cambridge has lost! A particularly useful and well-illustrated article by Professor Tansley on "The Forests of Provence" was published in this journal in 1912, and reprinted as a quarto pamphlet.

PROF. A. G. TANSLEY.

Small holdings and Cottage holdings.—The Ministry of Agriculture has published particulars of a scheme whereby men and women with suitable qualifications may obtain small holdings and cottage holdings under the Small Holdings Acts. The definition of a small holding, according to these Acts, is one exceeding one acre, and either not exceeding fifty acres, or, if exceeding fifty acres, then not exceeding an annual value of £100 for the purposes of income tax. It may be either bare land or provided with buildings, including a dwelling house. A cottage holding means a dwelling house, together with not less than forty perches and not more than three acres of agricultural land which can be cultivated by the occupier of the house and his family. Application for a small holding or a cottage holding should be made to the County Land Agent of the Council for the county in which the holding is desired. If the applicant resides in a county borough, application should be made to the Town Clerk. It should be noted, however, that Councils of County Boroughs have no power to provide cottage holdings. A successful applicant for a small holding will have the option of renting or purchasing it. On the other hand, an applicant for a cottage holding must be prepared to purchase the holding, as no provision is made for renting it. The consideration for purchase will be, as in the case of a small holding, an annuity equal to the full fair rent of the holding for a period of sixty years, or, at the option of the purchaser, an annuity for a shorter period of equivalent capital value. The purchaser of a small holding provided by a Council may obtain from the Council or from a society under the guarantee of the Council, a loan for the purpose of enabling him to construct, alter or adapt a house or farm buildings on the holding. The Council must be satisfied that the case is in every way suitable, and, if so satisfied, may advance up to nine-tenths of the value of the borrower's interest in the property. Interim advances may be made as the work proceeds. Advances are repayable by instalments on terms arranged with the lenders. As an alternative to the purchase of a small holding provided by a Council any person desirous of purchasing an existing small holding from a private owner, who is willing to sell him the holding, may apply to the Council for an advance, and the Council may, if they think fit, lend him an amount not exceeding nine-tenths of the value of the holding.

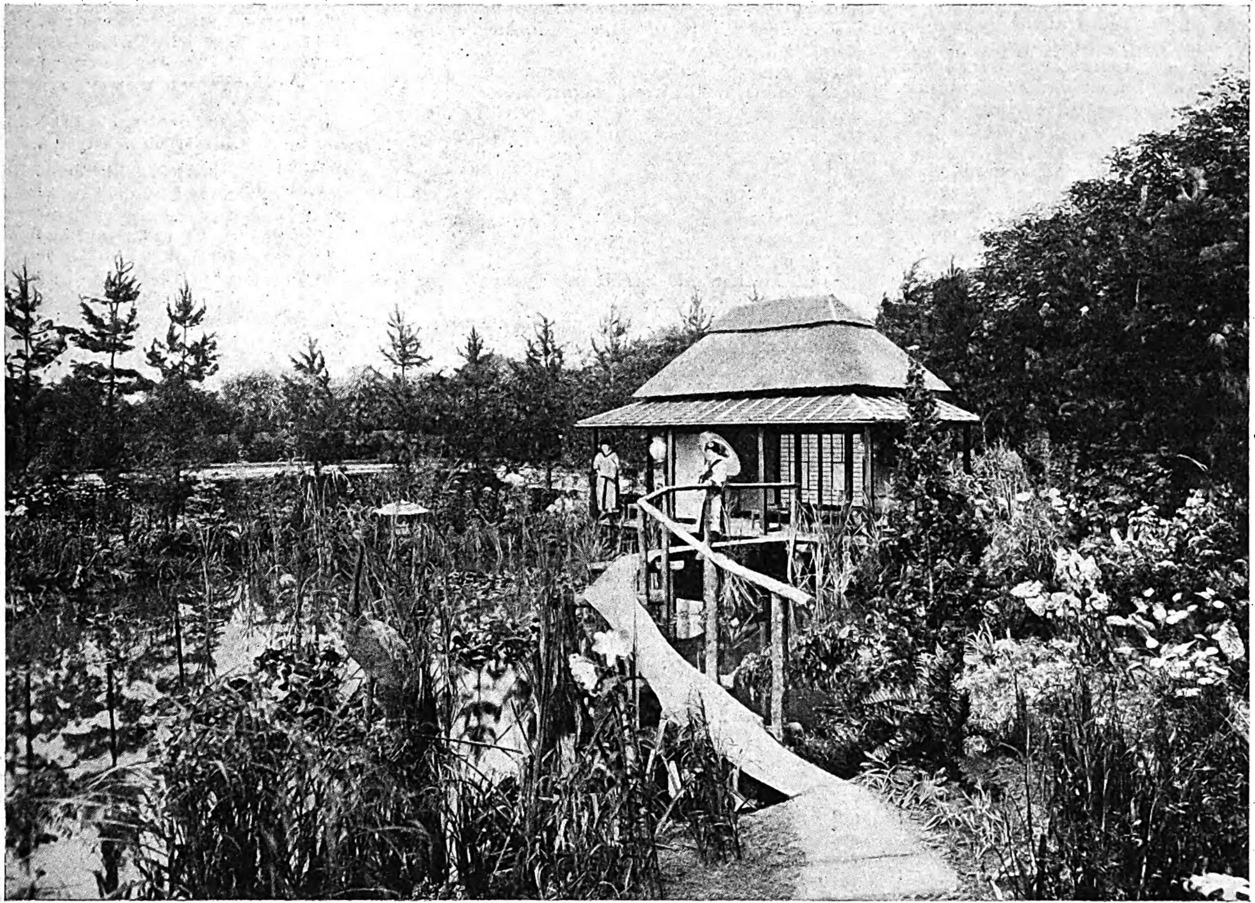

FIG. 79.—SOUTHPORT SHOW: MESSRS. W. H. GAZE AND SONS' JAPANESE GARDEN.
(see p. 198.)

Temple Gardens Exhibition.—A record number of entries has been received for the exhibition of London-grown flowers to be held at the Inner Temple Gardens, Victoria Embankment, on September 3, 4 and 5. The enthusiasm in connection with the recent Gardens Championships is being maintained. The exhibition is organised by the London Gardens Guild in conjunction with the *Daily Express*, and will include displays from well-known nurserymen and seedsmen, including a replica of the championship back garden by Messrs. J. Carter and Co. The most prominent feature will be a wonderful display of London-grown flowers by amateurs, including corporate displays as well as individual exhibits. As already announced, the exhibition will be opened on September 3 by the Rt. Hon. The Lord Lambourne, P.C., C.V.O., V.M.H., at 2.30 p.m. The presentation of prizes will take place on Monday, September 5, at 6 p.m. Admission on Sunday is by ticket only, from 2.30 to 8 p.m.

Ex-Services Society.—The estate attached to Frederick Milner House, Ermyn Way, Leatherhead, Surrey, is to be developed on market garden lines by the Ex-Services Welfare Society, for the benefit of war-broken, ex-Service men. An appeal is made for gifts of garden plants, seeds, or anything that would be of use in connection with the scheme.

Appointments for the Ensuing Week. — SUNDAY, SEPTEMBER 4: Wakefield and North of England Tulip Society's meeting. MONDAY, SEPTEMBER 5: Romsey Gardeners' Association's meeting. TUESDAY, SEPTEMBER 6: Royal Caledonian Horticultural Society's meeting. WEDNESDAY, SEPTEMBER 7: Glasgow and West of Scotland Horticultural Society's show (two days); Nottingham and Notts. Chrysanthemum Society's meeting; Cardiff and County Horticultural Society's Show (two days). FRIDAY, SEPTEMBER 9: National Rose Society's show (two days); Dalry (Ayrshire) Flower show; Royal Horticultural Society of Ireland meeting. SATURDAY, SEPTEMBER 10: Société Royale d'Horticulture et d'Agriculture de Bruxelles (nine days); Avonbridge Flower Show; Barrhead and District Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Horticultural Society's Garden, Turnham Green.*—The fine trees of red Brugmansia in the large conservatory, which are every now and then so gay with flowers, have been pruned hard in, and their wood has been painted over with a mixture of clay, soft soap and Tobacco-water, with the view of keeping them clear of insects; Hedychium Gardnerianum, a Maize-like Gingerwort, bearing fine heads of yellow inflorescence, is now in blossom, and a valuable plant it is in the border of a conservatory at this season of the year. The heads of flower measure at least a foot long, and eight inches through. Among flowering plants on the shelves we remarked some Continental Balsams of a large and fine description. In the large stove the huge Laelia superbiens, now familiar to most admirers of Orchids, is again throwing up flower stems which bid fair to be more numerous than in previous years, showing that when once a blooming habit is induced in this plant it will flower with certainty every season afterwards. The rare Cinchona Calisaya, from which the best kind of Peruvian bark is obtained, is now in full flower, *for the first time*, we believe, *in Europe*. Its clusters of pinkish, hairy flowers are extremely curious. A large example of the double purple Hibiscus syriacus is now in full beauty in the open border, where it is very ornamental, and Ceanothus azureus and its pale variety are in blossom on the conservatory wall; of the two the variety is the gayer, its flower spikes being larger than those of the species. The arboretum is still in full summer dress, and altogether the garden is quite as inviting, and even more enjoyable at the present time than it has been at any period during the whole season. *Gard. Chron., September* 4, 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Orchid Grower to Lady Leon, Bletchley Park, Bletchley, Bucks.

Dendrobiums.—In spite of the shortage of solar heat, which is essential to the well-being of these plants, many of the deciduous and semi-deciduous species and hybrids of Dendrobiums are finishing their growth; when this has been completed, which may be seen by the full development of the terminal leaf at the apex of the new pseudo-bulb. When this is observed it is necessary to remove the plants to a cooler and drier atmosphere, where they may receive the benefit of extra sunlight and air to thoroughly bring the newly-made growths to maturity. It is not always advisable to remove the plants from their growing quarters immediately they appear to have finished their growth, for it is at this time that the roots become active, not only in lengthening themselves, but also in throwing out many lateral rootlets, whilst some kinds will develop roots from the bases of the newly-made pseudo-bulbs. Small as these matters appear, they are essential to success, as should these roots get injured by any means, the plants will lose much strength, and the flowers come small. It is better, where practicable, to select a position on one side of the house, where more air and light can be admitted, less moisture given, and the plants gradually exposed to the sun. This partial removal may take place immediately the leaf at the extremity of the new pseudo-bulb is completed, or where there is any fear of a plant starting into secondary growth. Should the latter have occurred, it is much the best practice to place the plant in the warmest position possible, and so enable it to finish this new growth at the earliest date. Plants that have completed their growths should not be allowed to suffer for want of water at the roots, as this may result in a check to growth which would cause them to finish prematurely and start into growth immediately afterwards. D. Wardianum, D. crassinode and some of their hybrids are very liable to do this, with the result that the flowers the following season are much inferior to those on plants that have received careful attention.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Parsley.—Where this herb was sown as I advised in a previous calendar, the young plants will now be ready for transplanting to their winter quarters, either in cold frames or in sheltered positions out-of-doors. Plant in rows made about one foot apart on well prepared ground enriched with a little old manure, also add a liberal sprinkling of burnt refuse from the garden fire. Keep the ground well hoed between the plants, and dust the latter frequently with old soot, which will act as a slight stimulant and also as a deterrent to slugs, which are often very destructive to young Parsley.

Tomatos.—Plants growing in houses and frames do not appear to be cropping so heavily as usual owing to the very wet, sunless weather of the past three months. Feeding the roots, especially with nitrogenous manures, should be done carefully; potassic and phosphatic manures will be more suitable. There is also a good deal of disease in some places and I advise that a greater amount of ventilation be given; never, at any time, should the atmosphere be allowed to become stagnant. Although I am not in favour of a drastic removal of the leaves, it will be found wise to cut away a portion of the foliage where it is too crowded, also to keep every side lateral pinched out. Secure the leading shoots in position with strong, soft raffia, and be careful not to tie so tightly as to compress the stems. If white fly appears fumigate the house, either with cyanogas, or a reliable white-fly fumigant so soon as the pest is detected. Tomatos growing in the open are not a success this season, and only those planted on the sunny side of a wall or fence are making real progress. Where a good crop has set, remove some of the foliage in the neighbourhood of the bunches and stop the leading shoots.

Onions.—The crop of Onions raised from seeds sown under glass should be carefully watched, and so soon as the bulbs are fully grown they should be partly lifted with a fork. Raise one side only at the first operation, while the opposite side can be similarly treated a short time afterwards. By adopting this method it will be found that very few of the bulbs will split, but ripen gradually. Remove all loose skins at intervals, and by the time the bulbs are ready for taking inside they will require but little further attention. When harvested, great care should be taken not to bruise the Onions, or they will decay quickly. I strongly emphasise this point, having proved that with careful handling, these fine, well-grown bulbs, will keep equally as well as those of the smaller maincrop varieties. I have even kept them quite sound after the bulbs of late crops have deteriorated. At the time of harvesting these large Onions should be taken direct to an airy vinery or water-tight frame and laid carefully on wood-wool; they should be turned occasionally until they are perfectly ripe, at which time the necks will have almost disappeared, and if required for exhibition purposes may be tied neatly with raffia. Where frames or glass are not available the Onions may be tied in bunches of four and hung in a very airy, open shed, and although they will take longer to ripen, they will be found to keep equally well.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Trachelium coeruleum.—This is becoming a most popular plant for greenhouse decoration. It develops large heads of pale blue flowers. The present is a very suitable time to sow seeds where flowers are needed in July next year. The seeds may be sown in pots or pans filled with a light, sandy compost, and covered very lightly with fine soil. Place the seed-pans in a cool greenhouse in which the seeds will soon germinate. Prick off the seedlings so soon as they can be handled, and grow them on near the roof-glass in a cool house or frame. This plant is not particular with regard to compost, but it resents a close atmosphere.

Bulbs.—To keep up a plentiful supply of flowers during the winter the grower has to rely to a certain extent on bulbs, especially after the turn of the year, when Chrysanthemums become scarce. Tulips and Narcissi are well-nigh indispensable, while Hyacinths and Iris tingitana are useful as pot plants. But perhaps the most important bulbous flower for cutting purposes is the Narcissus. The bulbs should be obtained now and either placed in receptacles five inches or six inches in diameter, or grown in quantities in boxes, if cut blooms and pot plants are in demand early in the year. It will be best to grow large batches of one or two kinds. Paper White Narcissi should be chosen for an early display, while Golden Spur, Emperor, Sir Watkin and King Alfred will form a good succession. There are many good Tulips, and one of the best is Prince of Austria. Darwin Tulips make a grand display, but no attempt should be made to force this type hard. A moderately rich rooting-material is recommended, the receptacles should be clean and well-drained, and the compost made fairly firm. Nearly all bulbs require similar treatment; they should be potted directly they are received and the pots plunged in clean ashes or leaf-mould to encourage roots to develop. When the bulbs have made sufficient roots and top growth is evident, they should be removed to a frost-proof house or frame and afterwards grown in gentle warmth as required. Hard forcing is not to be recommended, for most bulbs resent this treatment, and failures may be traced to this error of cultivation alone.

General Remarks.—Plants of winter-flowering Begonias that were rooted late and are still in small pots should be transferred to larger receptacles as they become ready for this to be done. These Begonias resent over-potting, therefore care is necessary in this direction. Other plants that need potting are Poinsettias, which should be grown in pots of various sizes, ranging from sixties to thirty-two's. Grown in these pots they will be found useful for grouping. Continue to prick off the various kinds of annuals such as Schizanthus, Godetia and Antirrhinum, as they become ready, and grow them under cool conditions. Make another sowing to obtain plants for successional flowering.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Black Currants.—This crop has been fairly good this season, in fact, better than for the past three years. The bushes having been cleared of the fruits, the nets used against birds should be removed, the ground between the bushes hoed and weeded, and the latter pruned. It is a mistake to defer pruning until winter, especially where the bushes have made much growth and become crowded with shoots. Where the heads are well furnished with shoots cut out as much of the old wood as can be spared to allow air and light to reach the young growths that will fruit next season. Young bushes will not require much pruning, but the training of the heads should be attended to. Unhealthy, overgrown and much neglected bushes may sometimes be made to produce good crops by cutting them down to the ground in order to cause new basal growths to develop, and this may be assisted by applying a good mulch of rich manure over the roots and watering them occasionally with liquid manure.

Apples and Pears.—The gathering of these fruits will require the constant attention of the grower, for harvesting top fruits should be done at intervals as they become ripe. Sun and warmth are greatly needed to perfect these fruits. Protection against birds may be necessary, especially against the small blue tit, which will quickly damage many of the best dessert fruits. When the trees are trained on walls, nets may be used, but these cannot be employed on large trees in the open, where other means to preserve the fruits from injury must be adopted.

Gooseberries and Red Currants.—Where these fruits are grown as standards and pyramids see that they are well supported against strong winds. Cordon trees should not be overcrowded with useless growths. Tie the leaders in position and keep the foliage clean and free from red spider. Older trees growing on poor land should be fed with stimulants to promote health and vigour in the growth; liquid manure supplied liberally at intervals, or a liberal mulch of manure will prove highly beneficial to these fruits.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Pot Strawberries.—Now is the time to make preparations for stock plants for another year. When the runners have made sufficient roots to prevent the ball of soil from falling to pieces they should be detached and planted at once. It may not always be convenient to transfer them direct to their permanent quarters, but an effort should be made to do so as the production of strong, early runners next year depends largely upon a good start now. The rooted runners should be planted on the best prepared site in the garden, fully exposed to sun and light, and in no way associated with plants intended to yield a supply of fruit in the open. Another important matter is the regular introduction of new, healthy runners, as by this means the deterioration is kept in check; certain varieties appear to suffer more than others unless new stock is introduced. The cool, showery weather of July favoured root-development of the runners, but has encouraged the spread of mildew. Growth has been rapid since the plants were potted, and if they have escaped all checks, they should be making good progress. If mildew or red spider have been troublesome the foliage should be dipped in a solution of sulphur and the plants rearranged, giving them more room so that air may pass freely amongst them. Frequent changes of position are favourable to growth. Watering is an important operation, as Strawberries should never suffer from lack of moisture. Soft water is better than hard, but I incline to the belief that pot-bound plants should be regularly fed through August and September; much, however, depends upon the size of the pot and the quality of the compost. Weak soot-water and guano in solution may be used alternately two or three times a week, with occasional overhead syringings with soft water on fine evenings.

Frame Strawberries.—Anyone who has a surplus stock of maiden plants and a frame six feet in width and twenty feet in length, which will hold 120 plants, may steal a march upon the earliest open air beds, and assuming each of the plants produces half-a-pound of fruit, the work amply repays the trifling amount of labour and attention which this method entails. Any fairly rich Strawberry soil will answer well provided there is good drainage. When the frame is planted one watering will settle the soil and very little more attention will be needed beyond weeding, removing runners and watering should the autumn prove dry. Many gardeners and amateurs obtain good crops of Strawberries by this method, and provided the plants are kept not more than fifteen inches below the glass, they will do remarkably well.

Top-dressing Vines.—The best time to top-dress early vines is in September and should be done annually. All old mulching material and inert soil should be removed. When the surface roots have been laid bare the loose material may be carefully removed and fresh compost enriched with bone-meal and a little vine manure substituted to a depth of two inches. If a portion of the inside space eventually to be filled with compost looks unsightly it may be filled with fresh fermenting leaves, if not before, when the vines are started.

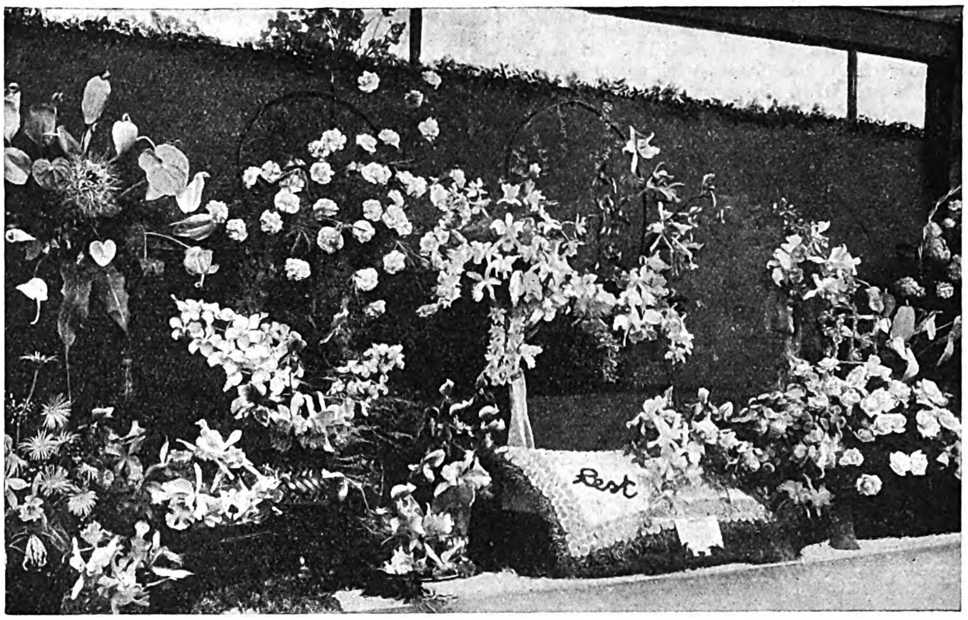

FIG. 80.—SOUTHPORT SHOW: MR. R. F. FELTON'S CHAMPION EXHIBIT OF FLORAL DESIGNS. (see p. 197).

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Anemone coronaria.—The many beautiful varieties of this Anemone, both single and double, are invaluable, not only for bedding, but also for supplying cut blooms. They are very accommodating plants, and by planting them at different times they may be had in flower over a long period; they are easily raised from seeds but at present I am only concerned with the dry roots, which are usually relied on to give a display in beds as distinct from those grown for a supply of cut flowers. Although they may be planted successfully over a long period for successional purposes, there is no doubt that for spring bedding early planting is best, say, during the later half of September or beginning of October. Anemone coronaria may be planted in beds or borders in rich, well-manured soil, and it is an advantage if the planting sites are prepared some time in advance of planting, as they do best in fairly firm ground. Care should be taken that they are planted the right side up; this advice is very necessary as young cultivators often find it difficult to distinguish the crown or growing point.

Planting Bulbs in Grass.—As the bulbs come to hand they should be planted, as this can be done before beds are cleared for replanting. Narcissi suffer from being kept out of the ground for a considerable length of time and should be planted first. Bulbs should be planted in as natural a manner as possible; it is a good plan to scatter them in irregular drifts and plant them where they fall. Many other bulbous subjects may be used for naturalising in grass or under large beds of deciduous shrubs. Crocuses especially are excellent for planting under individual trees or groups of trees on lawns, for in such positions they get plenty of light and sun. Many of the smaller bulbous subjects may be used in various ways, including Scillas, Muscari, Chionodoxa and Brodiaea uniflora (syn. Triteleia uniflora).

Anemone fulgens.—This Anemone and its varieties are also very useful for a display in the garden and the flowers are ideal for cutting. The corms should be grown in rich, moist loam, and, in my experience, lime is beneficial. In common with A. coronaria and its varieties, A. fulgens enjoys a rich, moist loam, but stagnant moisture is fatal to success with them; thus, in cold, wet, low-lying situations, the beds or borders should be raised somewhat above the general level.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Cabbages.—The main crop of this useful vegetable should be planted as early in September as possible, using plants raised from seeds sown in July, which are now of nice planting size. Plant in fairly firm ground. When the soil has been prepared it is advisable to draw shallow drills as for seed-sowing, and set the young plants in these at the requisite distance apart, putting the rows of the dwarfer and earlier varieties much closer together, and the plants themselves closer than in the case of the second early sorts, which, as a rule, make considerably more leaves before hearting. So soon as the young plants have recovered from the effects of transplanting and are again growing erectly, the ground between should be stirred deeply with the Dutch hoe or other cultivator, and the drills filled in around the necks of the plants, thus forming a partial moulding up which will support them and enable them to come through a series of autumn gales with very little injury. Stirring the surface soil frequently when the weather permits keeps it not only free from weeds, but in a sweeter condition, and the plants respond by growing more regularly than they would do in soil that has become caked and hard on the surface.

Strawberries.—The first week of September is a suitable time in which to plant new beds or borders of Strawberries, and if the runners were prepared as previously advised by layering they should now be in good condition for removal to their permanent quarters. The ground should have been prepared thoroughly by double digging and manuring some time in advance of planting, so that it may have had time to settle. Many failures are recorded nowadays with the Strawberry crop, and disease has devastated many acres to the great loss of commercial growers, so that the best possible cultivation should be practised, and every means taken to stamp out the disease. Many interesting experiments are being carried out by the staffs of Agricultural Colleges throughout the country by means of controlled plots on which a variety of manures, fungicides, etc., have been applied, and the results when tabulated will, no doubt, prove of great interest to all concerned. The methods of cultivation have been entirely changed during the past thirty years, and whereas we are now recommended never to stir the surface of the Strawberry bed deeply, as by doing so much injury will be done to the surface roots, it was at one time the usual practice to set a line down each side of the rows, cut off the overhanging foliage and runners with a spade, and dig deeply between the rows, burying mulching materials and foliage in the process, and leaving the surface rough for frost and snow to sweeten it during the winter. The results from the old treatment were generally more satisfactory, so far as crops are concerned, than they are to-day. Strawberry plants intended for forcing should be transferred to their fruiting pots, filled with rich, heavy compost, containing wood-ash and bone-meal. The pots should be well-drained and set on a firm ash base, either in a cold frame with the sashes removed, or in the open, where watering, removal of runners, weeds, etc., may be attended to until such time as danger from frost threatens, when the pots should be buried to their rims in ashes or other non-conducting materials. Where other means have failed to give good crops, a trial should be given to the most promising of the newer sorts, which, among other good qualities, may have a great disease-resisting capacity.

FLORISTS' FLOWERS.

GLADIOLI OF MERIT.

SOME notes of the British Gladiolus Society's Show at Taunton on August 10 and 11, from the point of view of a florist and raiser of new seedlings, giving a selection of the flowers shown of special merit and originality, may be of interest. These are not necessarily all new, but possess novelty in the sense that they are, in their respective types, unsurpassed, at any rate by varieties flowering at about that date. Of the varieties shown, there were some thirty of outstanding merit and originality. This may seem few out of the many hundred varieties shown or in existence, and no doubt as many more could be added from among those that will flower later in the season. Flowers may also be considered with regard to their use for special purposes, such as massing for colour effect, for exhibition, and so on, and a selection to include all these would greatly increase the numbers, but such is beyond the scope of these notes. Those selected to be noticed here are of all-round outstanding merit in all characters, or novelties in colour and markings.

PURE WHITES.—The two best white varieties shown were Purest of All and Mt. Everest, the former with the faintest tinge of pink, perceptible only in the fading flower; the latter a slightly "colder" white, due to the faintest tinge of yellow in the fading flower. The chief defects in white Gladioli are narrow petals, especially the two lower inner segments, and consequent lack of balance. These two varieties have comparatively broad and rounded segments and good substance (for whites). There is some tendency for the petals to fold at the margins, Mt. Everest being rather the better in this character, with smoother and flatter petals.

WHITE WITH COLOUR IN THE THROAT.—Three varieties of about equal merit were Yvonne, Dorothy Kelway and Elora. Yvonne is, perhaps, the best on the whole (as shown); it is white, tinged with pink, with a fan-shaped blotch of pale crimson. The flowers are of fine, open form, with broad petals, and the spike is good, but not entirely regular. Dorothy Kelway also has flowers of fine, broad-petalled, open form, and the spike is very good. It is white, tinged pink, with a small speckled flush of pale carmine and yellow in the throat. Elora is practically the same as Yvonne, but with a smaller and weaker, broken blotch.

PINK AND ROSE.—Richard Deiner was far the finest in these colours. It has very large flowers of fine, broad-petalled, open form, coloured soft, clear salmon-pink, flushed deeper in the throat. Nimrod, shown by Mr. F. W. Ransome, has also large, open flowers of fine form, but the spike is a little short; the colour is clear, deep pink with a salmon tinge, slightly lighter in the throat. Panama may also be mentioned, it is still a first-class flower in form and colour, but a little colder in tone than those named above.

ROSE AND ROSE-RED.—There was no flower of this colour (rose) shown appreciably better than Groff's Dawn. The large, suffusing, carmine blotch gives a general effect almost of red rather than rose. Two other varieties, though classed as full reds, may be noticed here on account of their special colour. Louise, shown by Messrs. Velthuis and Co., and Scarlet princeps, shown by Mr. A. E. Amos. They are much alike, of the same type, and evidently of Cruentus descent in some degree. The form of the flowers is something like that of Panama, but more open, and with very smooth petals but more roundly tipped. Both sorts have well set spikes, but the stems are not very stiff as is often the case with Cruentus hybrids. The colour is a self-rose-scarlet (nearest to rose-dorée of Ridgway), Scarlet princeps being a little nearer to scarlet-red. They are not only fine flowers, but interesting as a distinct type.

RED.—Red Gladioli for purposes of comparison must be separated into light scarlet and deep scarlet or vermilion. Of the light scarlets Pfitzer's Triumph and Liebesfeur were undoubtedly the finest. Both are of beautiful colouring; Pfitzer's Triumph is light scarlet, flushed with grenadine, with open flowers of fine form. Liebesfeur is a clear coral-scarlet, with a fine, though rather close-set spike of exhibition type. Of the two scarlet shades there were many shown, but with the exception of two of my own seedlings, Splendour and Cardinal, the latter being derived from Liebesfeur, all were more or less streaked with flakes of deeper colour or dull purple-red, or stained, especially at the edge of the petals, with slate or neutral tint. This is necessarily a bad characteristic from the point of view of the florist or breeder whose chief aims in colour are purity and brightness—and flaking is very difficult to eliminate. And where colours are blended, or where there is a contrast of two or more colours in a flower the aim is for harmony. The only colour with which this slatey-blue tone seems to blend harmoniously is rose, as in Rose Ash—certainly the effect when in conjunction with geranium scarlet is harsh. One arresting variety may be noted, King George. It has a towering spike with very large flowers of open form, and coloured clear scarlet, with a large, clear cream blotch, but the petals are margined with slate.

VIOLET-BLUE.—For more than twenty years Baron J. Hûlot has been without a rival in its colour. Now it is at last challenged by Sovereign, shown by Mr. W. E. Samuel, a very rich deep violet to purple-blue self. The flowers are of medium size, of fine, open papilio-type form, very well balanced and symmetrical. In contrast, Heavenly Blue, shown also by Mr. Samuel, is a pale self violet-blue. It is of the same type as the now well-known Mrs. V. Konynenburg, but the colours are clearer and more delicate, a little paler and bluer, and though the actual differences are slight, it is a more beautiful flower; indeed, I think, it was the most charming flower of the show.

YELLOW.—Of the deeper, or golden yellow primulinus selfs, of which several varieties were shown, Souvenir was the best. Mrs. Beatty, shown by Mr. E. Baines, had rather larger flowers with broader petals of a slightly deeper yellow, and might eventually prove better, but only one spike was shown.

PALE YELLOW AND CREAM.—Three varieties of Glory of Noordwijk type, and probably derived from it, were Belinde, Leviathan and La Lys, in order of merit. The colouring of all three is practically alike, pale cream-sulphur, the lower segments being a shade deeper. Leviathan, as shown by Messrs. Velthuis and Co., is the largest, but the spike is a little rough. This is due to it being composed of two types of flowers, the normal with two smaller inner segments, and the semi-peloriate or exhibition type with one small, inner segment. When this occurs, the flowers are necessarily somewhat irregularly disposed on the spike owing to the different degree of twist in the pips of these two types. For a perfect, regular spike the flowers must all be either of one or the other type. Belinde has a regular spike of flowers of fine form, and is also rather more uniform in colour. La Lys has the broadest petals but a shorter spike, and the colouring is of a more lemon tone. Elf may also be noted for its colouring, cream white suffusing to pale pyrethrum (greenish) yellow in the throat. It has a regular spike of open, broad-petalled flowers. Helioda is a distinct variety from the above, and was one of the outstanding flowers of the show; the colour is pale saffron-yellow, the inner segments being tinged deeper. The flowers are of fine, open form, but the spike is a little irregular (as shown) and the petals are slightly "ruffled," the inner ones especially. From this characteristic and the colour, I should expect that it is descended from the old Saffrano. By some this ruffling of the petal is not considered a fault, and it is not unpleasing in moderation, but from a breeding point of view it is a detrimental—or at least, a dangerous—character, as it tends to give irregular and malformed flowers.

ORANGE (Primulinus).—A pure orange variety has long been sought for, and it now seems possible through a perfect blending of a golden yellow Primulinus with a clear red of the older varieties. But as yet that ideal has not been attained. The best orange Primulinus Gladiolus grown was undoubtedly Orange Queen, which has comparatively large flowers of good form. The colour is not so rich or deep as in Xanthia, and it is not a perfect blend, much yellow showing in the throat, and it has a small red blaze. Sheila is a larger flower and better in form, but less "orange" and also has a distinct red median band on the lower petals.

I often consider that in the striving after mere colour and its natural outcome, the production of self-coloured flowers, breeders are neglecting the very great possibilities of variety and originality of markings and contrast, which are, after all, specially characteristic of the genus, and which deserve to be developed at least as much as self-colouring. Such flowers appeal to the great majority of those with comparatively small gardens, who have not the scope for "massing" and broad colour effects, and, whose interest is in the individual flower or variety. There were, of course, many flowers shown displaying markings, but very few in which these markings were of any special distinction, showing originality of type or arresting contrasts. Such as there were, had the appearance of being accidental rather than deliberately sought after for their own sakes. I may exemplify this in mentioning a few which owe their charm chiefly to the distinctiveness or contrast of the markings. Madame Mounet Sully has flowers of fine, broad and round-petalled form and clear cream-white, with a solid, defined blotch of grenadine red—a beautiful contrast. Unfortunately, it has a short spike and Incontestable (not shown) is a much finer variety in all but the special colour of the blotch. Another beautiful flower of similar type for which Messrs. Kelway obtained an Award of Merit is Rt. Hon. Countess Beatty. It has large flowers of fine, open Childsii form, clear white, with large, defined, crimson-ruby blotch. Lady Muriel Digby (Kelway) is another beautiful variety which owes its charm largely to the harmony of colouring of the markings. The ground colour is a soft cream shading to pale citron, with a "spotted" blotch of bright red on a pale yellow suffusion. Another variety that may be noted, of quite a different type to these, is Gipsy Girl; the colour is rich deep blood-red, the lower petals being almost entirely covered with thickly-sown spots of the same colour. It is this marking which gives a distinction to the flower which otherwise would be only an ordinary good, deep red variety.
A. J. Bliss.

BULB GARDEN.

ALLIUM SPHAEROCEPHALUM.

AN old bulbous plant, greatly neglected, was honoured with an Award of Merit by the Floral Committee of the Royal Horticultural Society, on July 27, of last year. It was exhibited by Mr. R. C. Notcutt, and the name given in the R.H.S. "Transactions" is A. sphaerocephalum descendens. I am not at present able to refer to the *Index Kewensis* regarding the name, but I am of opinion that descendens is either a synonym or refers to a separate species. In one modern book of reference both A. sphaerocephalum and A. descendens appear as distinct species, the latter being described as one foot high and as a native of Switzerland, whilst A. sphaerocephalum is given as two feet high, and a native of southern Europe. I have known this plant for very many years, and first grew it as A. sphaerocephalum, but this was called in question, and the plant was said to be A. descendens. Personally, I am inclined to consider that the two names represent one plant. The name of descendens is applied because the flower heads open at the apex, and the lower florets gradually expand until the whole head is of a rich purplish-red.

Although it shares to some degree the odour of the other Onions, which is so objectionable to many, it is a worthy plant, as may be gathered from the fact that that accomplished author and gardener, Sir Herbert Maxwell, informs us that A. sphaerocephalum is his favourite amongst the Allium species. Sir Herbert speaks highly of this Allium, with its rounded head, which opens after the leaves die off, and has tall, slender, yet strong stems from two to three feet high. He also tells us how the bumble bees frequent the flowers and sleep lazily on them. This is an attractive feature of the plant and adds to its interest in the garden. It is easy to grow almost anywhere, but the fact that its leaves die off so early would suggest that A. sphaerocephalum should be planted where it will rise through some carpeter. Bulbs are procurable, and may be planted in autumn, at a depth of three or four inches. Whatever differences of opinion may exist regarding its claim to the distinction it received, there is no doubt that Allium sphaerocephalum is worthy of inclusion in the garden, where late-flowering bulbs of distinct appearance are desired. With me it flowers in the end of July and through August. *S. Arnott.*

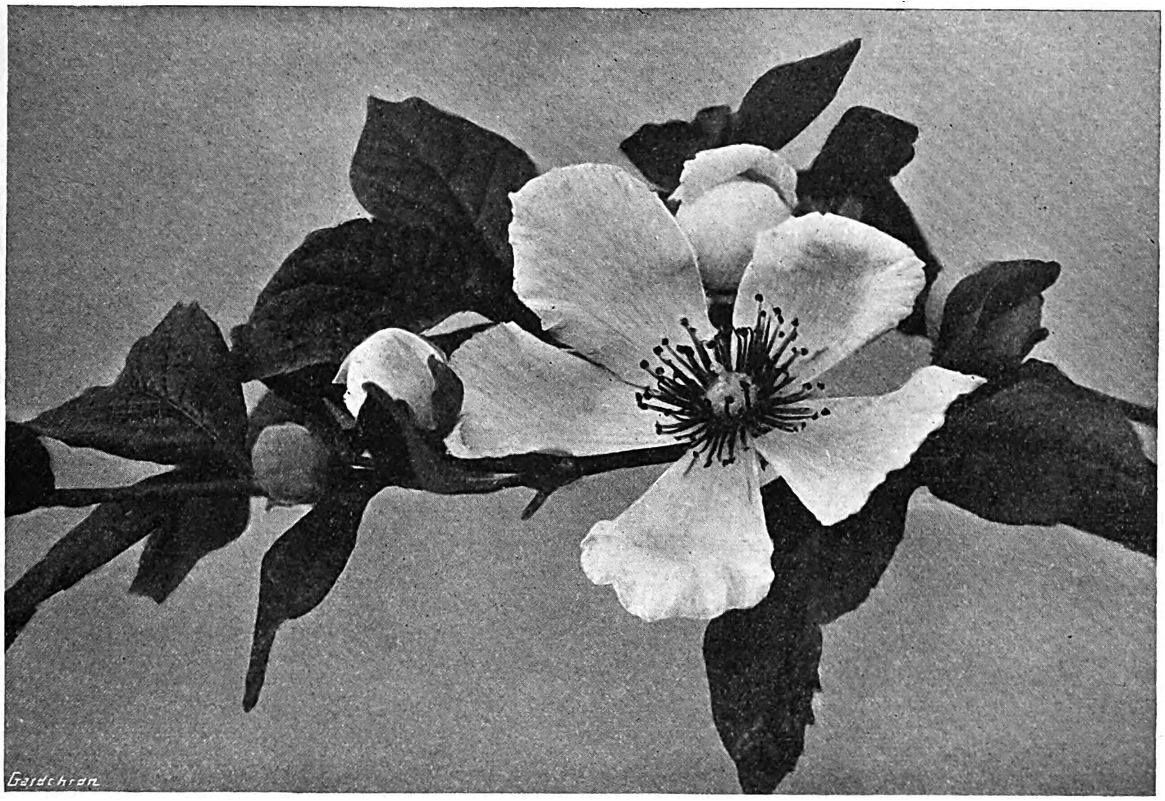

FIG. 81.—STUARTIA MALACHODENDRON.

TREES AND SHRUBS.

STUARTIA.

This genus of large deciduous shrubs or small trees has botanical affinities with the wild Camellias. Both belong to the Natural Order Ternstroemiaceae, but the Camellias are evergreen and the Stuartias deciduous shrubs.

The genus is spelt Stewartia by some authors, but as it is named in honour of John Stuart, the Earl of Bute, who acted as chief adviser to Augusta, Princess Dowager of Wales, when she founded the Botanic Garden at Kew, in 1759-1760, the desirable spelling to use would seem to be that at the head of these notes.

The genus Stuartia is interesting as being another example of the close affinity of the flora of China and Japan and that of the United States. Of the species cultivated in British gardens, two, and one variety, are from the eastern United States, two from Japan, and one from China.

I do not think that the true Japanese species S. monadelpha is now in cultivation; the few specimens that I have seen so named are Wilson's Chinese introduction, S. sinensis.

Rehder, in his recently published *Manual of Cultivated Trees and Shrubs*, describes a new species from Korea, introduced to the United States in 1918. "S. koreana, Nakai, a tree up to forty-five feet in height."

Judged by the positions where we have them thriving best at Kew, and in other gardens I have visited, the Stuartias should be given positions sheltered from north and east winds. They are obviously partial to a cool, moist soil, and for this reason, at least in their early years of growth, should be planted in large beds and borders where vegetation affords shelter to the plants and shade to the ground beneath.

A well-drained soil being desirable, the ideal ground for Stuartias would appear to be a light loam with peat and leaf-mould added when preparing the stations for planting. Though deciduous shrubs, plants of considerable size are not easy to transplant successfully, except with large balls of soil. For this reason the Stuartias should be planted in their permanent positions when young, with other plants growing temporarily around them to furnish the ground and afford protection to the young Stuartias.

Seeds, when available, layers and cuttings, provide ready methods of propagating Stuartias.

The illustration reproduced in Fig. 82, depicts a rooted cutting of Stuartia Malacodendron inserted in a sand frame, with slight bottom heat, in a propagating pit. The cutting was inserted on July 21 and photographed on August 19.

S. Malachodendron (Fig. 81), is a deciduous shrub or rarely a small tree, eight feet to probably more than twenty feet in height. The leaves are ovate or obovate, two inches to four inches long, five-eighths inch to two inches wide, minutely toothed, bright green above, paler beneath, and hairy on the under side. The flowers are the most beautiful in the genus, two-and-a-half inches to three-and-a-half inches across, white with a central cluster of attractive purplish anthers; solitary in the axils of the leaves. During July and early August, well established plants flower freely and are amongst the most interesting and showy of rare shrubs, flowering after mid-summer.

Though Mark Catesby has placed it on record that a plant of Stuartia Malachodendron flowered in his garden at Fulham in 1742, it is still far from a common shrub in gardens. The largest specimen I have seen approached twenty feet in height, at Iver Heath, near Stoke Poges. This Stuartia is a native of the coast regions of the south-eastern United States, and no doubt because of this Cavanilles described it as S. virginica, a name under which we several times find it noted by horticultural writers during its long, but somewhat chequered associations with British gardens. It is figured in the *Botanical Magazine*, tab. 8,145.

S. pentagyna, L'Hérit., designated the five-styled Stuartia in the *Botanical Magazine*, where it is figured in tab. 3,918, is the largest-flowered species of the genus, and also has the largest leaves. It is a native of the southern United States, an old inhabitant of British gardens, but still far from common.

It is a wide-spreading shrub from eight feet to twelve feet or more in height and broader than high. The leaves are ovate, up to five inches long and about half as wide, with serrate margins, bright green above, paler beneath. The flowers are creamy-white, often, unfortunately, with one deformed petal, three inches to four inches across, with a central cluster of yellow stamens.

The variety grandiflora has, as the name suggests, larger flowers, and is also distinguished by purple stamens.

S. Pseudo-camellia, Maxim., is a tall tree, readily distinguished in cultivation from the other species by its upright habit. S. Pseudo-camellia is slow to form a trunk, as it branches freely from the base. The late Professor Sargent, during one of his journeys in Japan, recorded trees fifty feet in height, with trunks six feet in circumference. The ovate leaves are two inches to three-and-a-half inches long and half as broad, bright green above, paler beneath, and finely toothed. The creamy-white, cup-shaped blossoms, two inches to two-and-a-half inches across, with yellow stamens, are borne singly in the axils of the leaves on the young shoots in July and early August.

The early history of this False Camellia, as Maximowicz designated it when describing the species in the *Bulletin of the Academy of St. Petersburg*, in 1867, as a cultivated plant would appear to be entirely continental. It was exhibited in flower by Siebold at the International Exhibition at Amsterdam in 1868 under the name of Stuartia grandiflora. This name also is used with the coloured plate in the *Revue Horticole*, 1879, and apparently still retained on the continent, as only this week I have seen a plant so labelled, which was purchased from across the water a few years ago.

S. Pseudo-camellia is figured in *The Gardeners' Chronicle*, August 18, 1888, page 187, where it is recorded that the plant flowered on a wall in the nursery of Rodger, McClelland and Co., at Newry, in 1885. The drawing was made from a plant which flowered in the Coombe Wood Nursery of Messrs. James Veitch and Sons, and was exhibited by them at a meeting of the Royal Horticultural Society on July 24, 1888, a First Class Certificate being awarded.

S. serrata, Maxim., is the least known and cultivated of the five species represented in our gardens to-day. It is said to be a common wild tree in Japan, growing to a height of fifty feet to seventy-five feet. It was described and named by Maximowicz in 1867 from specimens collected by him in Japan in 1863.

I can find no record of the date of its introduction to our gardens. The spray from which the figure in the *Botanical Magazine*, tab. 8,771, was prepared, came from the late Sir Edmund Loder's garden at Leonardslee, Horsham, in June, 1917.

Though represented only by healthy bushes at present, its behaviour suggests that in gardens with a mild climate it should, with age, attain the dimensions of at least a small tree. The leaves are elliptic or obovate, with serrate margins, dull dark green above and paler beneath, downy on the mid-rib and in the axils of the veins, one-and-a-half to three inches long, and three-quarters to one-and-a-half inch wide.

The cup-shaped flowers are creamy-white, stained with red on the outside of the petals, two to two-and-a-half inches wide, with serrate margins to the petals, and in the centre a large tuft of showy, yellow anthers. The flowers are solitary, borne in the axils of the leaves of the young shoots in late June and during July.

S. sinensis, Rehd. et Wils., is a free-growing Stuartia, native of western China. Mr. E. H. Wilson discovered it in 1901 in Western Hupeh and Eastern Szechuan, when plant collecting for Messrs. James Veitch and Sons. It was at first identified with S. monadelpha, a Japanese species, but subsequent investigation proves the Chinese plant to be a distinct species. In *Plantae Wilsoniae*, Vol. 11 p. 396, Messrs. Rehder and Wilson describe the capsule of S. sinensis as the largest in the genus, and that of S. monadelpha as the smallest.

Mr. Wilson describes S. sinensis as a shrub or small tree varying from six feet to thirty feet in height. A bush at Kew obtained from the Coombe Wood Nursery in 1910, is fifteen feet in height.

The leaves are oval or ovate-oblong, finely serrate, bright green on both surfaces, one-and a-half to four inches long, three-quarters to one-and-three-quarters inch wide. The white flowers, with a central tuft of yellow anthers, are two inches across, and produced in the axils of the young shoots during July.

The figure in the *Botanical Magazine*, tab. 8778, was made from a spray of flowers sent to Kew in 1917 by H. Williams Grigg, Esq., from a bush flowering in his garden at Cann House, near Plymouth. *A. Osborn.*

HOHERIA LANCEOLATA.

Under the above name a plant has recently flowered in the gardens of the Royal Horticultural Society, Wisley, and cut specimens from another source were shown at a recent meeting at Westminster.

The leaves are lanceolate, leathery, glabrous and two to four inches long. The white flowers are very powerfully fragrant. Cheeseman, in his *Manual of the New Zealand Flora*, makes the above a variety of H. populnea, a nearly glabrous plant, with much larger leaves. Two other names have been applied to the above plant, one being H. sexstylosa, and the other var. crataegifolia. The last-named was based on young plants, and the former name is now found to be incorrect as to the number of styles. Indeed, the botanical characters of three genera have broken down, after more extensive observations and researches and it would appear that Plagianthus, Hoheria and Gaya are to be reduced to one genus, namely, Hoheria. The carpels were usually solitary in Plagianthus, several in Hoheria, and winged on the back, and carpels many in Gaya Lyallii; but it is now found that the carpels are too variable in number to be definite. The juvenile leaves vary greatly from those of the adult, and the leaves of the latter also vary greatly in shape. *J. F.*

CAMPANULA SPECIOSA, POURR.

There are no fewer than five species of Campanula of the Canterbury Bell type which are native to south-east Spain. They have been confused by authors, have become confused in cultivation, and may probably have intermediaries linking them in nature. It is not surprising in view of this that, as Mr. Clarence Elliott points out on page 146, what is usually sown in gardens as C. speciosa is not the true species, or that *The English Rock Garden* contains no recognisable description of C. speciosa, Pourr.

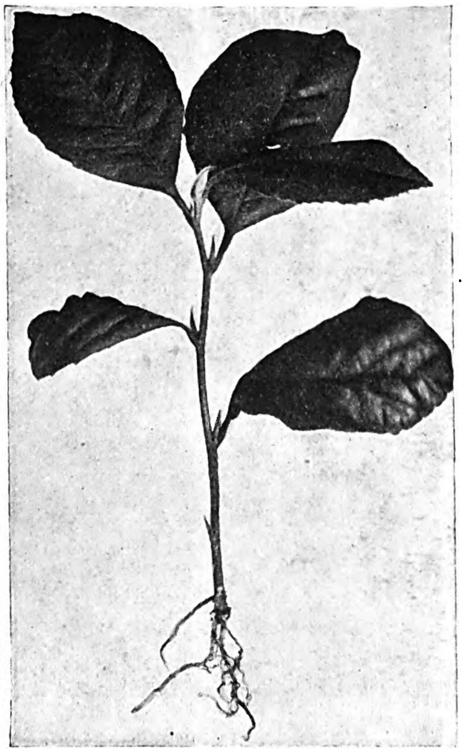

FIG. 82.—ROOTED CUTTING OF STUARTIA MALACHODENDRON.

Without being in a position to solve all the difficulties which the five species involve, I am tempted to suggest that Farrer's descriptions of C. speciosa and C. affinis have been obscured by the inclusion of characters that belong to C. Bolosii, Vayr., a species which is native to Monserrat in particular and to the Catalonian Pyrenees in general. The most marked characteristics of Vayreda's Campanula are its height (from 40 to 120 c.m.), its villous stems and leaves, the very large, projecting style, and the very open bells of an intense blue with deeply-cut, triangular lobes. It appears to be definitely biennial.

A careful reading of Farrer's descriptions of C. speciosa and C. affinis suggests that one or other of the main characters of C. Bolosii have become attached to one or the other species, especially as the other four species native to the same area (C. speciosa Pourr., C. mollis, L., C. affinis, R. Sch., and C. dichotoma, L.) are reputed to be of much the same height (10 to 30 c.m.), and therefore on this account alone very distinct from C. Bolosii. All these Campanulas are stated to be perennial, with the exception of C. dichotoma, which is an annual.

If one were to suppose the five species, four at about their tallest and C. Bolosii at about its shortest, to be collected and sent home in a mixed bundle, together with intermediaries (of which there is no record so far as I am aware, but which seem very probable in view of the nature of this group of Campanulas), how would the gardener distinguish them? The character of the plants would be presented mainly by their leaves. The leaves of C. speciosa are spathulate (the lower) and lanceolate acute (the upper), semi-stem-embracing and toothed; of C. Bolosii, lanceolate and stem-embracing; of C. mollis, almost spathulate, with the stem leaves obovate, with a very short petiole, the uppermost sessile, the lower toothed, the upper entire; of C. affinis, lanceolate; of C. dichotoma, ovate and sessile—a series of rather fine distinctions! The mixed bag I am imagining would, therefore, appear much the same in the garden—until one or other was found to be perennial, biennial or annual. I am suggesting, in short, that it is inherently probable than any one of them might be found in gardens under the name of C. speciosa. *E. E. T.*

——This Campanula, which excites the enthusiasm of Mr. Elliott (*Gard. Chron.*, Aug. 20., p. 146), has its centre of dispersion in the High and East Pyrenees. The first one was found by Pourret in the Val Campan, where it is very common on rocky soil in the mountain region. It is common in the Cevénnes, the Corbières, and passes to Montpellier in Capouladoux. On the Spanish side, it reaches Barcelona and Saragossa.

The form which Mr. Elliott found in Monserrat has the same appearance as all those I ever found, which answer his description exactly. The plant does not vary but, in the Western Alps, it is replaced by C. Allionii, which is its nearest relative. I once found a colony of C. Allionii at the foot of the Mont Aiguille (Vercors, near Grenoble) which had the appearance of C. speciosa, the branched flower-stems bearing seven to nine big flowers together, so I thought at first sight it was C. speciosa. These two Campanulas are nearly allied, both being very *envahissantes*, and sometime troublesome plants for the rock garden. Both are of very easy culture.

The three other "speciosas" given by the *Index Kewensis* are synonyms of persicifolia, glomerata and elegans, and have nothing in common with the Pyrenean plant. *Henry Correvon, Floraire, Chene-Bourg, Geneva.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

L. B. C.'s notes upon the Asiatic Martagons (page 111) have interested me in relation to a pretty Lily which came here (whence I forget) in 1922 under the name of Lilium Duchartrei, and has flowered every year since about a month later than L. Martagon. Its flowers resemble those of L. Duchartrei (*Bot. Mag.*, t. 8072) and those of Captain Kingdon Ward's Lily figured in *The Gardeners' Chronicle* of August 13; but they are borne, not in an umbel, but in a stiff raceme, usually of nine blossoms, the stem being three feet high.

L. B. C. observes that Wilson in his *Lilies of Eastern Asia* "has swept all the allied forms (of Asiatic Martagons) into one common aggregate under Franchet's L. Duchartrei;" but he seems to have overlooked how Wilson states, on page 69 of the said work that, "with the advent of more material from Yunnan, the facts appear in a fuller light, and I am constrained to recognise Franchet's L. lankongense as a distinct species."

The Lily we have here corresponds in all respects with L. lankongense, as described by Wilson and figured in Plate X of his work—in all respects except, possibly, one. It ought to have a stoloniferous bulb; but, having learnt through bitter experience to be very shy of interfering with a thriving Lily, I have refrained from examining the bulb of this one. Hitherto, it has shown no sign of wandering stoloniferously, having sent up each year two flowering stems without the slightest shift of position as marked by a cylinder of zinc to protect it from slugs.

Lilies in general have prospered this year, except for damage wrought by mice, voles and slugs. Botrytis has not shown its ugly stain except on one clump of L. chalcedonicum; but L. Sargentiae got badly nipped by frosts on the last night of April. Lilies used to be grievously afflicted here by Botrytis; so much so that we had practically abandoned trying to grow L. candidum. Acting in the belief that the surest means of warding off fungous attack is the promotion of vigorous growth, I have treated all Lily bulbs liberally with wood-ash applied in spring. Whether *post hoc* or *propter hoc*, I leave to wiser heads to decide; but the result has been practical immunity from Botrytis on Lilies.

L. superbum and L. pardalinum being reckoned American Swamp Lilies, one is recommended to grow them in a moist border or by the waterside, but such conditions are not necessary in our humid atmosphere; indeed, both species do best in an ordinary border of light, gravelly loam with an admixture of pulverised peat. I have this morning measured a clump of L. superbum in such a situation. It has three principal stems measuring respectively ten feet one inch with twenty-eight blooms, nine feet four inches with twenty six blooms, and seven feet five inches with thirteen blooms. Beside it a clump of L. Martagon dalmaticum has risen to a height of seven feet, and was a notable object in July with its candelabra of swarthy, highly-varnished turncaps.

No genus is more faithful to the structure and colours of its flower than Hypericum, and in late summer it is difficult to pronounce which is the best of the shrubby species. On the whole, perhaps, if one were limited to a single species, that should be H. Forrestii, but H. patulum var. Henryi runs it very hard; the typical H. patulum is not hardy in all districts, but where it thrives has the merit of continuing covered with a succession of flowers until stopped by frost. All the shrubby species seed very freely, and a very fine chance hybrid has sprung up here to a height of eight feet, the reputed parents being H. Hookerianum and H. patulum. *Herbert Maxwell, Monreith.*

ALPINE GARDEN.

SCABIOSA PTEROCEPHALA.

This pretty plant (Fig. 83) is a native of the Grecian mountains, where it occurs in dry, rocky places up to six thousand feet. The leaves are covered with a soft, grey pubescence, and the flowers are of a pleasing shade of mauve. When the flowers are over the plant is no less attractive on account of the feathery tufts which characterise the fruits and which recall those of certain species of Clematis. *J. E. G. W.*

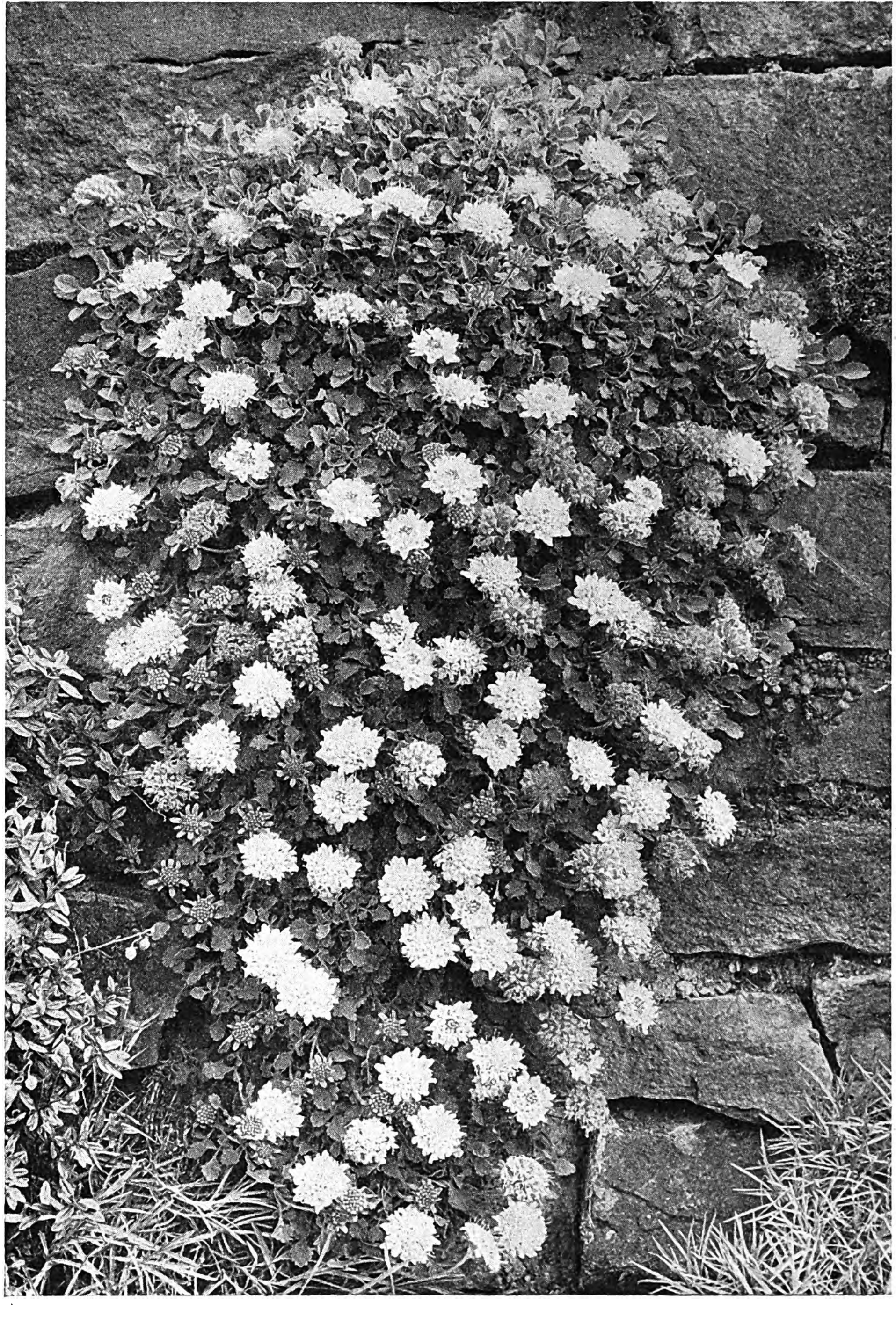

FIG. 83.—SCABIOSA PTEROCEPHALA FLOWERING IN THE R.H.S. GARDENS, WISLEY.

GERANIUM FARRERI.

This Geranium is undoubtedly one of the best of the genus and well worthy of cultivation. Although uncommon it is not difficult to establish in a light, sandy soil. In its habit of growth it is not unlike G. cinereum, being of a neat, tufted habit and not exceeding four inches in height.

The flowers, which are produced very freely, are of a very delicate pink, thinly veined with green at the base of each petal, and the anthers are black. Each flower stalk carries two separate flowers, which add to the wealth of bloom. Propagation is effected by division or seeds.

CAMPANULA HALLII.

One of the prettiest of the now numerous new hybrid Campanulas in existence is that named C. Hallii, in honour of the raiser, Mr. Alva J. Hall, of Harrogate. It has been in bloom in my rock garden for some time, and is universally admired for its neatness of habit and the beauty of its pure white flowers. It is evidently a pusilla or caespitosa hybrid as it has a similarly compact habit, with small, bright green leaves. Above these are produced a great number of the lovely open white bells. It is seldom that we have a new hybrid of such an excellent constitution as this has; indeed, some of the newer hybrids are decidedly "miffy," but this fault cannot be attributed to C. Hallii. It is growing here on a slightly sloping bank in the rock garden and has made great progress since it was planted, and it does not in the least belie its reputation as a splendid grower. It appears to be comparatively indifferent regarding soil, but that usually afforded to the bulk of alpine plants will suit it perfectly. It is certainly a little gem worthy of being grown in the most select rock gardens. *S. Arnott.*

MALVASTRUM CAMPANULATUM.

Although not of recent introduction, this Malvastrum is not general in cultivation. It has a loose, free habit, and although by no means a trailer, it is not stiff or erect, seldom exceeds one foot in height, and makes an excellent subject for the rockery.

The flowers are pale violet with black centres; they are cup-shaped and about one inch in diameter. Each stem bears up to twenty axillary flowers.

This plant is not at all fastidious in the matter of aspect or soil. Seeds do not appear to set, but propagation may be easily effected by division.

The plant is sometimes known as Malva campanulata; it is a native of Chile and is illustrated in *Gard. Chron.*, September 3, 1910, Fig. 71. *S. R. D.*

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LILIUM MONADELPHUM.

LILIUM MONADELPHUM was founded by M. von Bieberstein 119 years ago,[*] and he based the species on the peculiar character of the stamens which, in the type plant were monadelphous, *i.e.*, united in a solid band where they encircle the ovary and not springing separately from the base of it as is usually the case in other species. Monadelphum is the Latinised version of the Greek *μόνος* (one) and *αδελφὸς* (brother), and Monadelphia is a Linnean class in which the anthers are united by their filaments into a single brotherhood. To make the point clear to those who have not hitherto grasped the meaning of the interesting botanical feature in question, Miss L. Snelling has prepared a drawing (Fig. 84) in which the stamens are free and another (Fig. 85) in which they are joined up in monadelphous fashion. The lower drawing has been reconstructed, because a living specimen exhibiting the peculiarity is not available.

The character is not a constant one, and out of scores of specimens of L. monadelphum the writer examined when the species was more readily obtainable than it is now, he only found a few in which the stamens were united at their base, and not one in which they were united even half way up the ovary. In his *Monograph*, Elwes wrote that though the monadelphous character did not appear to him to be a constant or reliable one, it varied very much in different plants—some having the filaments united for at least a third of their length and others only at the base, or, as is more common in the variety Szovitsianum, not at all.

On the other hand the Russian botanist Miscenko, in a critical study of the characters of L. monadelphum and its varieties,[†] stated that in the majority of cases the stamens of L. monadelphum are united somewhat lower than the middle in a tube, but that probably in the limits of variation of this species there lies a possibility of the formation of free stamens.

Miscenko's observations were the result of an examination of living plants in the garden of M.M. Regel and Kesselring at Petrograd and as all three Lilies—monadelphum, Szovitsianum and Kesselringianum—were flowering simultaneously, and in adjacent beds, he found it easy to observe the differences between the three.

In the same paper, however, Miscenko quoted a letter to himself from U. N. Voronoff, in which the latter wrote that he personally had observed L. monadelphum and L. Szovitsianum growing wild in Tsebeld (Transcaucasia) and often experienced a difficulty in assigning different specimens to one or the other! In any case, though botanically important, the monadelphous character is only of secondary interest to gardeners and as already explained it seems to be rarely found in plants cultivated in this country, possibly because L. monadelphum itself is now rare here; it seems to have been displaced by the variety Szovitsianum.

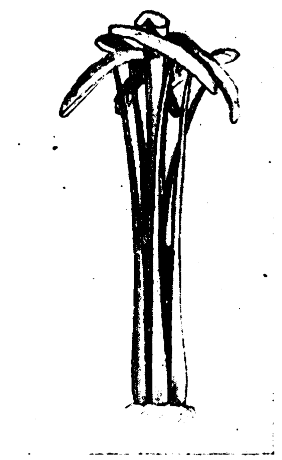

FIG. 84.—LILY STAMENS FREE.

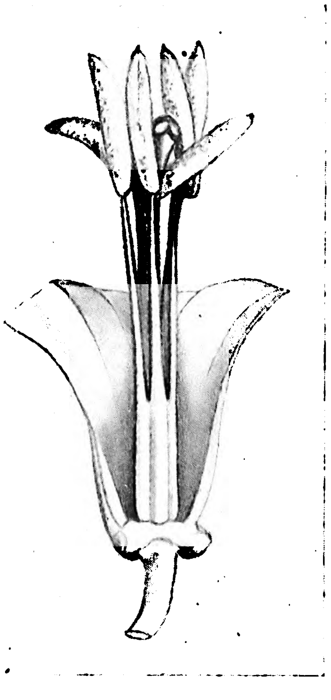

FIG. 85.—LILY STAMENS JOINED (MONADELPHOUS).

Besides Szovitsianum there are several well-marked forms of L. monadelphum which have been named:—colchicum, Ledebouri, ponticum and Kesselringianum; and though he had obviously not gone very deeply into the synonymity of such of these as he knew, the observations of Dr. Wallace[*] on them are as apposite as when they were made forty-six years ago: so they are quoted in full.

"This Lily, more generally called *Szovitzianum*, and sometimes *Colchicum*, is a most beautiful and rather variable species: not merely from the unusual (canary) colour of the flowers, their large size, and contrast with the chocolate-brown anthers, but from the symmetry of the pyramidal spike. Each flower (when well-cultivated) like an evenly suspended bell, hangs with base parallel to the horizon. . . We have had in one season over 1,500 spikes in bloom, from 4 to 6 feet high, with from 4 to 20 bells on each spike, some of them (the flowers) 6 inches across, most beautifully coloured, scarcely any two alike, a sight of beauty that falls to the lot of but few.

Among its many varieties, we have selected the following as expecially worthy of notice:—

A. A fine broad petalled form with large bells of flowers, rather pale in tint, but regularly and heavily spotted with about four rows of dark purple spots on either edge of the petal.

B. A very rich deep canary, almost citron-coloured form, with very few spots.

C. A pale lemon-tinted form, few spots.

D. Has a deep yellow centre and paler tinted edges.

E. A peculiar pale coloured form, very regularly and richly spotted, with pale coloured anthers of a light greenish tint.

F. The unspotted variety, of a deep citron colour. We have been accustomed to call this variety *Monadelphum*. According to some Liliophilists, this form (*Monadelphum*) differs from the type[*] in (*a*) having anthers covered with lemon-yellow pollen, instead of chocolate-brown, (*b*) in being earlier by three weeks to flower, and (*c*) in showing its flower buds directly it is above the ground, whereas, in the type, the buds are concealed by the leaves till ready to bloom. As regards (*a*), we have noticed anthers bearing pollen of all shades, from a pale greenish-yellow to a very rich red brown. As regards (*b* and *c*), we have noticed there are differences, more especially in plants that have been planted in the previous autumn, and are not yet well established, but not with plants like our own, that have been undisturbed through three winters. Cultivators must not expect to see this Lily in all its beauty unless planted in a moist-loamy or clayey soil, and left undisturbed for at least two winters—then it will be **magnificent.**"

L. monadelphum seems to have been unknown in gardens here till 1842, when it bloomed in the Royal Horticultural Society's garden at Chiswick from bulbs sent to the Society by de Hartwiss, of the Imperial gardens at Nikita in the Crimea, as L. monadelphum. Later, Dr. Fischer, of St. Petersburg, sent bulbs here under the same name. In describing the R.H.S. Lily,[†] Lindley and Paxton adopted a name—L. Loddigesianum—given by Roemer and Schultes[‡] to a form of the plant which had been figured in the *Botanical Magazine*[‖] as L. monadelphum, on the ground that the *Botanical Magazine* Lily was specifically distinct from Bieberstein's original type plant of the same name. They pointed out (1) that in Fischer's plant the stamens were not monadelphous; (*a*) that von Bieberstein described the stamens as *sometimes* monadelphous, and they pertinently asked what differences beyond size of flower and petal markings could be found between the so-called L. Loddigesianum and L. pyrenaicum.

The involved nomenclature of this fine Lily has been dealt with by Van Houtte,[¶] who reached the conclusion that though L. monadelphum and L. Szovitsianum are singularly alike in their port and their characters, there are specific differences. Van Houtte referred to the monadelphous stamens of L. monadelphum, the yellow pollen and the straight style, contrasting them with the free stamens and the orange-coloured pollen of L. Szovitsianum.

Miscenko, who had published a diagnosis of L. Szovitsianum three years before,[§] dealt exhaustively with the synonymity of the two Lilies in 1914, in the paper already referred to, and reached the conclusion that they differed in form and structure.

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[*] *Flora Taurico-Caucasica*, Vol. I, p. 267 (1808).

[†] Characteristic signs in the structure and colouration of the blooms of Lilium monadelphum, M.B., L. Szovitsianum, Fisch. and Lall. and a new species from the Caucasus, L. Kesselringianum, Misc. *Bull. ur angewandte Bot.*, VII. Petrograd, 1914.

[*] *Notes on Lilies*, 2nd ed., p. 178 (1879).

[*] There is evidently some confusion here in Dr. Wallace's mind, because L. monadelphum is the type, and a reference to von Bieberstein's fine plate of it in *Centuria Plantarum Rariorum Rossiae Meridionalis* (tab. 4) shows the petals prominently marked with linear dots.

[†] *Paxton's Flower Garden*, Vol. II, t. 58 (1851-2).

[‡] *Syst. Veg.*, Vol. VII, p. 415 (1829).

[‖] t. 1405 (1811).

[¶] *Flore des Serres*, Vol. V, Sept. 1849, pp. 507, 509.

[§] *Works of the Bot. Mus. of the Imp. Acad. of Sc.*, St. Petersburg, VIII, 1911.

There are fine and poor forms of L. monadelphum and L. Szovitsianum, but the most desirable form of the latter is probably that with large flowers of which the petals are pale canary in colour, broad and marked on each side of the deep midrib with three or four rows of purple linear dots. The petals reflex to form a flat—not globular—flower and where the tube of the latter joins the pedicel it is flushed with purple. The tips of the petals are purple, too. This variety is usually fragrant, but in some of the other forms the scent is unpleasant and hardly distinguishable from that of L. pyrenaicum.

In another good form the flowers are smaller and more tubular than usual and are of deep golden colour, like that of Coreopsis grandiflora. Prior to the great war, this form was marketed from time to time by nurserymen as L. colchicum, a name for which there does not seem to by any formal publication—only an informal mention by one Steven, of a specimen in the Herbarium of the Botanic Garden in Berlin. L. colchicum derives its name from the fact that L. monadelphum and its varieties are native of the ancient Kingdom of Colchis, which, in the fourteenth century was part of Georgia—a province south of the Caucasus, between the Black Sea and the Caspian.

The variety Szovitsianum was first described by Fischer and Lallement in 1839 in their index of plants in the Imperial Garden at St. Petersburgh,[*] and those authors recognised the near relationship between the plant and L. monadelphum. They named the Lily for Alex. Szovits from whom they received the specimens on which the variety was based. According to Miscenko the only known habitat of this Lily is the sub-alpine zone of Guria and Adguria in Western Transcaucasia—the country of L. monadelphum. In the *Monograph* of Elwes the range is given as through Imeretia, Mingrelia and Georgia, but the multiplicity of geographical names need cause no confusion.

If L. Szovitsianum is rightly regarded as a variety of L. monadelphum, it is difficult to avoid the conclusion that L. colchicum and L. Kesselringianum must be regarded in the same light, though Miscenko makes the latter a good species.[†] Miscenko quotes D. Sosnovsky, then (*circa* 1913) botanist of the Tiflis Botanic Garden, as telling him that L. Kesselringianum grew on the limestone mountains of Djvari in Mingrelia, among Betula Medwedewi at an elevation of 6,000 feet, and that though the shape of the flower struck him very much, he paid no particular attention to it, considering it as an ordinary L. monadelphum or L. Szovitsianum, *i.e.*, a variety of the former.

L. Kesselringianum may be described as a pale straw-coloured, starry-flowered edition of L. Szovitsianum, with chestnut-purple pollen and stigma of the same colour. The anthers are half the size of those of L. Szovitsianum and the petals have scattered purple linear markings near their edges. The author had the plant in cultivation in 1915 from bulbs kindly sent to him by M. Kesselring and noticed that when L. Szovitsianum and L. Kesselringianum were grown together their differences were as obvious as those between L. monadelphum and L. Szovitsianum. These differences are clearly shown on the plate (Fig. 85) reproduced from Miscenko's paper, already referred to. They were not more obvious, however, than the differences between the many varieties of L. pardalinum, for instance, all of which are regarded as belonging to the one species; and it would probably be wise to regard L. Szovitsianum, L. Kesselringianum and L. colchicum as distinct varieties of the older L. monadelphum. On this point, however, Mons. W. Kesselring, in a letter to the writer,[*] expressed the view that the three Lilies mentioned are not varieties of one species, but represent good species, quite different in themselves, natives of different regions where one finds only one of the three species, and never all three together. It will be observed, however, that this view does not coincide with that of Voronoff, already cited.

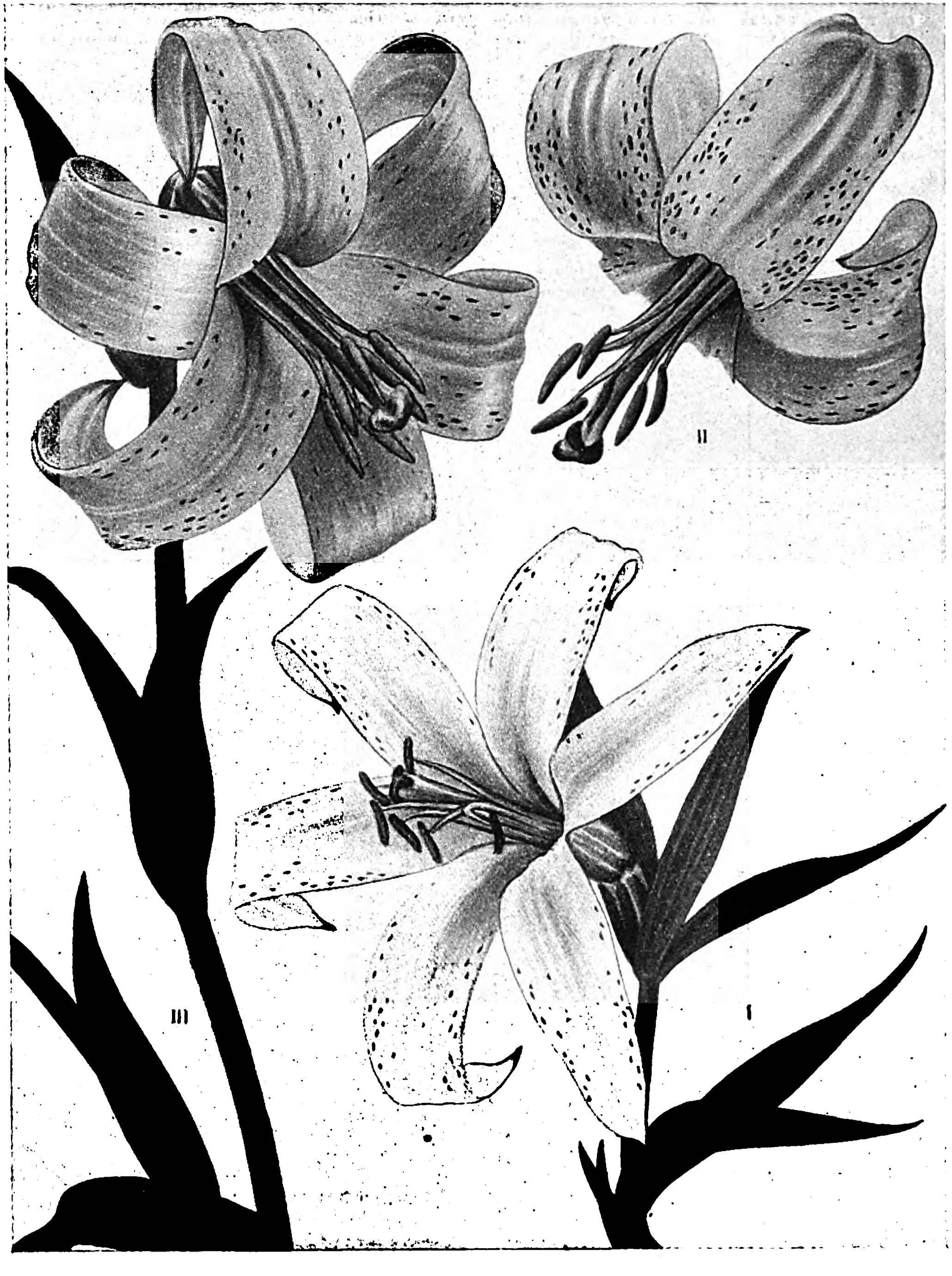

FIG. 86.—LILIUM MONADELPHUM.

(1) L. Kesselringianum, Misc.; (2) L. Szovitsianum, Fisch and Lall.; (3) L. monadelphum, M.B. Reproduced from Miscenko's paper.]

The relationship between L. monadelphum and L. pyrenaicum has yet to be determined, but apart from the monadelphous character of the filaments, the two may be more closely akin than is generally supposed. The author has had plants of L. monadelphum (but always lacking the monadelphous stamen character) from the continent which might be equally fairly described as fine examples of L. pyrenaicum or poor examples of L. monadelphum, and the known presence of the Pyrenean Lily so far east as Bosnia and Albania is suggestive. The range of L. monadelphum is generally described as through the Caucasus, but it may well prove to have a wider distribution.

Students of L. monadelphum and its varieties who are familar at once with the literature of the subject and with the Lilies as grown in Britain, will occasionally find themselves in a quandary because of the seemingly contradictory and involved nature of the synonymity. But they can always return to von Bieberstein's description and drawing of L. monadelphum (Fig. 86), and with these in view will have little difficulty in distinguishing it from its varieties. The latter, as grown in Britain and called Szovitsianum, are a trap for the unwary, as they have largely if not entirely, been raised from seed by a single grower whose stocks must have been crossed and re-crossed often enough to account for the remarkable variations.

Like all good things, the finer varieties of L. monadelphum are worth waiting for, but they need patience, inasmuch as large bulbs do not transplant well, and those of duck's egg size, which generally move well and throw a flower or two the season after planting, do not reach maturity for several years. Whatever the size of the bulbs, planters should bear in mind that these Lilies have a comparatively short resting season and begin to make new root-growth early, so that they should be transplanted soon after the seeds have ripened. In the south the bulbs should be in the ground before the end of September.

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[*] *Index seminum quae hortus botanicus imperiales Petropolitanus*, 1839, p. 58.

[†] "Characteristic signs in the structure and colouration of the blooms of L. monadelphum and L. Szovitsianum and a new species from the Caucasus, L. Kesselringianum, Misc." Petrograd, 1914.

[*] Dec. 1, 1915.

The bulbs—which in old specimens may be as much as 6 inches in diameter—should be planted 4 or 5 inches deep. The Lily seems to grow as well in broken shade as in full sun, and the finest specimens the author has seen were growing close to a Yew hedge in partial shade in the garden at Ketton Cottage in Rutland. The stems were about 6 feet high and nearly as large in diameter as a penny.

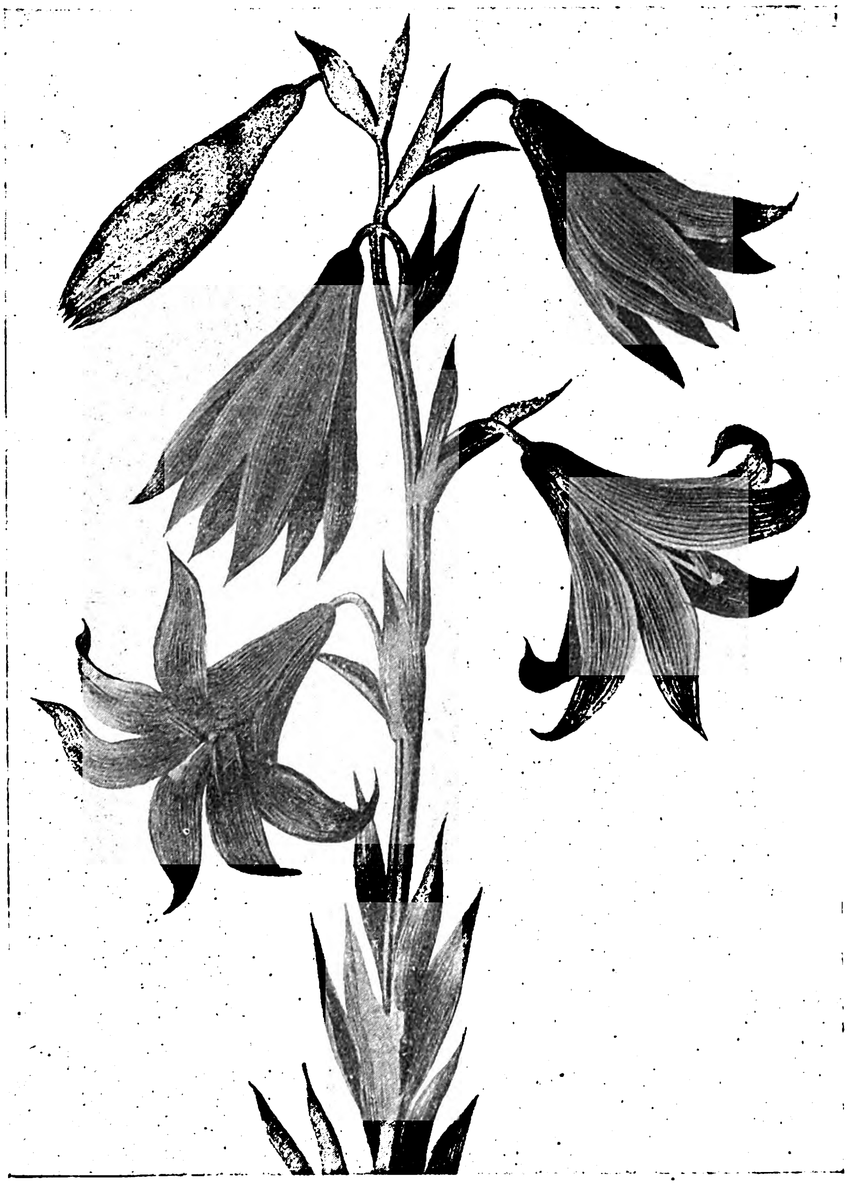

FIG. 87.—LILIUM MONADELPHUM, BIERBERSTEIN.

In the south the earliest flowering variety of L. monadelphum is usually in bloom in the first half of June and the other varieties follow it through that month. The Lily is not stem-rooting. As Dr. Wallace observed, one variety has a curious way of keeping its flower buds tucked away among the topmost leaves, until they are about to open, a peculiarity it shares with L. testaceum. The foliage of L. Szovitsianum will sometimes turn a deep brown while the plant is in growth, and this is usually a sign that there is something amiss with the bulb.

Raising this Lily from seed is a slow proceeding, as the seedlings do not usually reach the flowering stage for five years, and sometimes more. The seeds germinate quickly, but do not show their cotyledons above ground during the first season of germination, so that those unaware of this peculiarity are surprised, on examining the contents of the seed pan at the end of the first year to find seedling bulbs where there has been no obvious sign of life. Seeds may be sown in the open, and the author has often noticed self-sown seedlings springing up from the ground round about the base of this Lily in the garden, where the soil is undisturbed.

Those who are interested in the history and synonymity of L. monadelphum and its varieties will find a fine plate of the type in von Bieberstein's work already quoted.*

This plate, which is reproduced in black and white in Fig. 87, shows a deep yellow, small-flowered Lily without a trace of purple colouring anywhere on the petals. There is another plate of L. monadelphum in Reichenbach's *Flora Exotica*,† and this, again, shows a small-flowered Lily without trace of purple, and with green style and stigma differing from those in Bieberstein's plate. In the plate of L. monadelphum in *Gartenflora*‡ the style and stigma is wanting in all four of the flowers and in the sketch of the anthers!

There are also good plates of the variety Szovitsianum in *The Garden*,* and another in *Flore des Serres*;† the two plates in the *Monograph* of Elwes ‡ illustrate the remarkable variations in the species already referred to, and these are even more clearly seen if the plate in *Flore des Serres* is compared with that of Regel in *Gartenflora*,§ which Baker, in his consideration of L. ponticum, regards as representing L. Szovitsianum. There is an illustration of a good flowering head in the *Gardeners' Chronicle* of July 16, 1910, p. 37, fig. 15. *A. Grove.*

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* *Centuria*, etc.

† t. 89 (1834).

‡ Vol. 21, 1872, tab. 733.

* Feb. 26, 1876, suppl.; March 14, 1891, suppl.

† Vol. V, p. 507, Sept. 1849.

‡ T. 36 and 37.

§ Vol. XIII, t. 436, 1864.

SALE OF UNASCERTAINED GOODS AND SALES BY SAMPLE.

By a contract for the sale of unascertained goods is understood a contract for the transfer of certain things which have to be weighed or counted or otherwise dealt with before the price to be paid for the whole can be named, or the quantity to be transferred can be arrived at. For example, a man may sell a clamp of Potatos at so much a ton, but before the price for the whole clamp can be arrived at the Potatos will obviously have to be weighed. Then again, he may sell one ton of Potatos from a certain clamp, yet something has to be done before the buyer can say "those are the Potatos I have bought." In all these cases the same question arises, and that is, if after the making of the contract, but before the goods have been delivered, those goods are destroyed or stolen, who will have to bear the loss, the buyer or the seller?

The Sale of Goods Act of 1893 again provides us with the answer. According to the Act, where there has been a sale but the seller has to "weigh, measure, test or do some other act or thing—for the purpose of ascertaining the price," the buyer will not be liable if they are destroyed before this has been done and before he has had notice of that fact. Thus, referring to the clamp of Potatos again, if after the contract had been made and the Potatos had been weighed and the result of the weighing was known to the buyer, some of the Potatos were stolen, the buyer would have to pay for the whole quantity, although he only received part of them.

In the second case, where the price that will have to be paid is known, but the actual goods that will be delivered are not, the buyer will be liable for these so soon as they have been "unconditionally appropriated to the contract." Thus, in the second example, if the seller has weighed a ton of Potatos and set them apart from the rest, and had, in fact, unconditionally appropriated them to the contract, should any of them be stolen or destroyed, he could compel the buyer to pay for the ton and not merely those which were left.

Sales by Sample.

In the case of sales by sample, the Sale of Goods Act states that the following rules shall be observed:—

(*a*) There is an implied condition that the bulk shall correspond with the sample in quality.

(*b*) There is an implied condition that the buyer shall have a reasonable opportunity of comparing the bulk with the sample.

(*c*) There is an implied condition that the goods shall be free from any defect, rendering them unmerchantable, which would not be apparent on a reasonable examination of the sample.

In addition to those rules it is important to note that where goods are sold by description as well as by sample, they must correspond with the description as well as comply with the above rules. *Harold Sharman.*

NOTICE OF BOOKS.

Landscape Gardening in Germany.

The sixth book in the *Gartenschönheit* series is the first in a sub-series of three books grouped under the general title of *Garten und Haus; Das Haus in der Landschaft** ("Garden and House; the House in the Landscape"). It is a good and expressive title for the work in question.

The author, Herr Wiepking-Jürgensmann, is a well-known and clever German garden architect, and the book consists in the main of pictures, plans, and interesting descriptions of gardens laid out or altered by him, many of them intended as settings to dwellings of high archaeological or artistic interest, and placed in the most picturesque and romantic situations. The author is an artist in the best sense of the word; all his heart is in his work, and he knows how to convey his own enthusiasm to the reader. One feels with what eagerness he must visit for the first time the house or castle of which the gardens are to be formed or reformed; his keen researches into its past history; his detailed and anxious study of the surroundings lest a false note creep in to mar the perfect beauty of the final whole. As he himself remarks, many of the newer gardens created by him are not yet at their best, having been planted only a few years ago; yet most of the photographs and sketches present a picture of very harmonious and restful beauty, such as is usually only attained by age and long, slow development. If one may mention a disadvantage in the book from the foreign reader's point of view, it is the slightness of the indications as to the geographical position of the various estates. It may be that their names are so well-known in Germany that no particularising is needed; but it is intriguing to see illustrations such as those of "Der Garten Murats," or "Normannenburg an der Adria" (the last-named a glorious ruin on a tall crag, sea-girt on three sides) and to have no nearer description of where these lovely places can be seen. Possibly, however, the architect is thus ambiguous out of consideration for the convenience of his patrons. The working plans which accompany the text are not the least interesting part of the work; in some cases it must have required real genius to make so good a use of a terrain so awkwardly placed and shaped.

One of the most charming of the illustrations shows a small nude child playing on the edge of a Lily pond, which the caption explains is used regularly as a children's open-air bath. The author, in commenting on this, speaks bitterly of the garden-less condition of the flat-dwelling town child. Gardening in Germany, never so popular as in England, suffered a severe set-back during the war; but as Herr Wiepking states, in the last ten years there has been an eager movement among the rising generation towards garden-making, and all the delights that the possession of a garden brings in its wake. Certainly the widest possible circulation of books like *Garten Und Haus* can do nothing but good, and should do much to encourage a love of gardens among the young men and women of present-day Germany, thus directly contributing to a permanent improvement in the general standard of physical health.

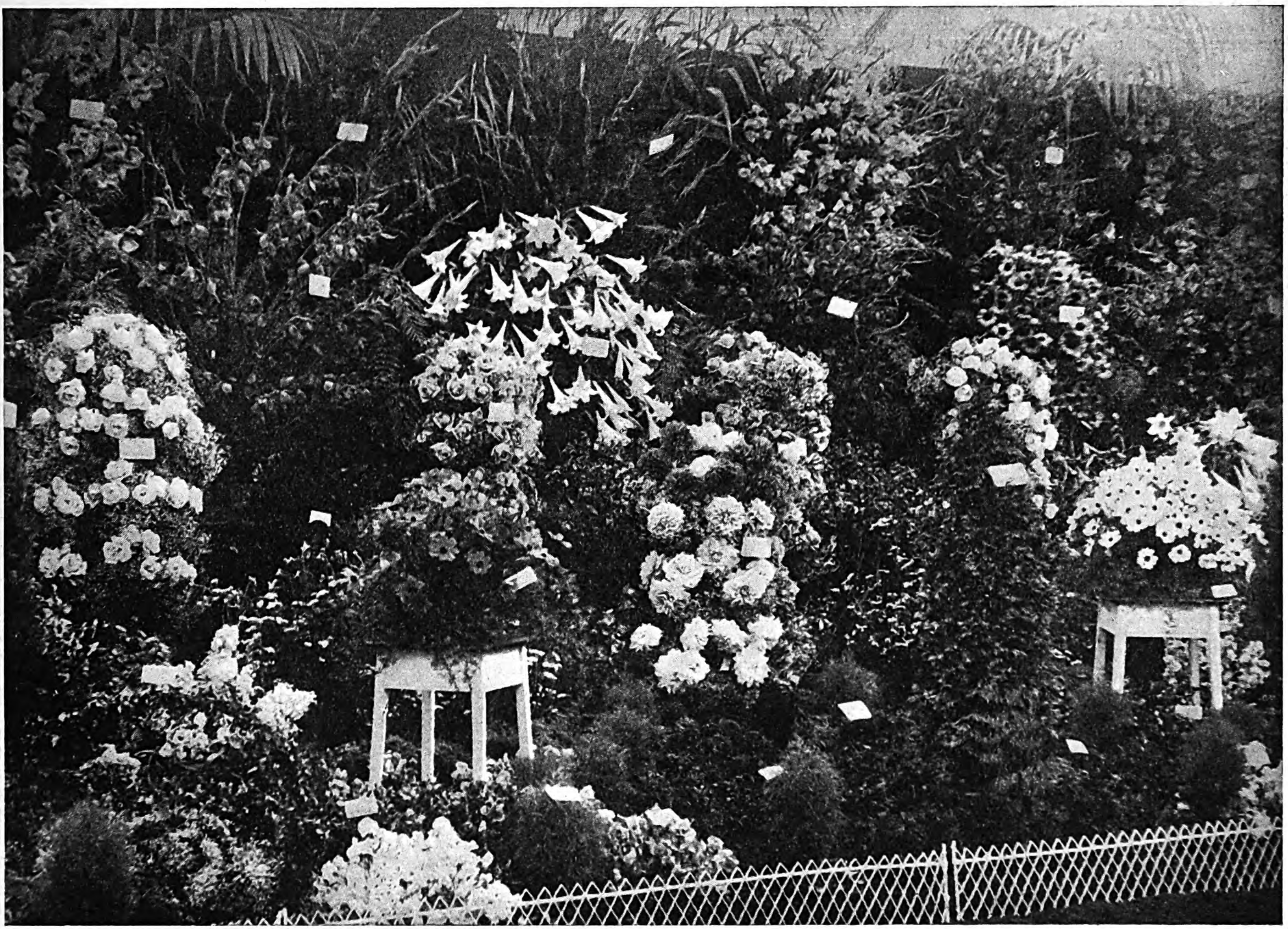

FIG. 88.—MESSRS. E. WEBB AND SONS' LARGE GOLD MEDAL EXHIBIT AT SHREWSBURY SHOW.

(see p. 159).

PUBLIC PARKS AND GARDENS.

THE ROOKERY, STREATHAM COMMON.

This charmingly secluded garden, situated on the south side of Streatham Common, and controlled by the London County Council, is one of pleasant surprises to the visitor entering it for the first time.

The ground slopes away sharply from the entrance, wide stone steps leading down through spacious lawns that form an admirable setting to the fine specimens of Cedrus Libanii. At the foot of the steps a Rose pergola crosses at right angles, and on reaching this, the sudden view of the garden below, laid out in the Old-English style, is most strikingly pleasing and impressive. This garden is oblong in shape, wide borders running along the boundaries, while the central portion is divided into a series of large beds, the intervening paths being crazy-paved. A small, circular pond contains Nymphaeas, and around this are several rough-edged York stone pillars, suitably clothed with plants, together with an old-time, roofed well; all these provide distinct features, and to the visitor a sense of peace and quiet. The beds and borders are full of colour provided by a large variety of herbaceous plants. Among useful shrubs noted in the garden the following are worthy of mention: Punica Granatum, Ceanothuses, Syringa Wilsonii, Clerodendron trichotomum, Spiraea bracteata, Daphne Mezereum and Deutzia crenata.

Beyond the old-English garden, a long, narrow strip of land has been fenced off from the orchard and planted as a "White" garden, with such subjects as Lilium candidum, Digitalis, Achillea The Pearl, Phloxes, Veronica salicifolia, Antirrhinums, Campanula alliariaefolia, C. persicifolia, silver-variegated grasses, Cornus alba sibirica variegata, Buxus sempervirens var. argentea, and Polygonum baldschuanicum clothing an old Apple tree, with white Violas forming an edging. It was interesting to note here a particularly healthy and thriving plant of that fine New Zealand shrub, Plagianthus Lyallii, some eight feet in height, and flowering profusely.

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* *Garten und Haus.* 1. *Das Haus in der Landschaft.* Von Heinrich Fr. Wiepking-Jürgensmann. Berlin-Westend, Verlag der Gartenschönheit. Paper, 6 Mks.; bound, 8 Mks.

Then, turning to the right near the entrance, a path leads to the rock garden, through which a tiny stream wends its quiet way between the stones, the sides affording accommodation for such moisture-loving plants as Gunnera manicata, Phormium tenax, Mimulus luteus, Arundinaria nitida, Saxifraga ligulata, Primulas, etc., while the miniature pools are filled with small-growing Nymphaeas and Sagittaria sagittifolia.

The rock garden is amply furnished with types of alpine plants, and shrubs noted here include Pernettya mucronata, Genista hispanica, Veronica cupressoides, Berberis Darwinii, Convolvulus Cneorum, Pittosporum Mayi, a good example of the curious Olearia nummularifolia, Spartium junceum, Phlomis fruticosa, Cistus laurifolius, and occasional trees of flowering Prunuses, while many superb specimens of Olearia macrodonta occur in and about the shrubberies on the outskirts. *H. G. King.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante. pp. 131-137).

(*Continued from p.* 175.)

ENGLAND, E.

HUNTINGDONSHIRE.—The general excellent prospects for a good fruit year were rather spoilt by 10° of frost on April 29. In these gardens we are very fortunate in having quite an average crop of stone fruits, but in some localities Plums are a total failure. Apple trees in exposed places are fruitless, others are cropping abundantly. Strawberries were badly crippled by frost. The June rains came just in time to save the Raspberries, for these gardens are situated on the edge of the Fens, and the land dries out very quickly. *Guy S. Aubertin, Conington Castle Gardens, Peterborough.*

LINCOLNSHIRE. — In the early spring all kinds of fruits showed remarkable promise of record crops, for the trees were a mass of flower. On the night of April 30 we had 10° of frost, and the next two days cold, cutting north-easterly winds prevailed; the result was the Pear crop was more or less ruined. Plums were drastically thinned, but sufficient were left for a good average crop, while Apples were unharmed. The early flowers of Strawberries were blackened, and the ripening of the crop retarded a fortnight. Black Currants were thinned somewhat by the frost but other small fruit were unharmed. *Alexander M. Warnes, Highfield House Gardens, Gainsborough.*

——Fruit trees, generally, were a mass of bloom, but late frosts spoilt the crops. Strawberries rotted during the continuous rains, but the late varieties, Waterloo and Givon's Late Prolific, gave heavy crops, which ripened very late. Red Currants and Black Currants are very plentiful. *Thomas Cox, Hainton Hall Gardens, Lincoln.*

——The fruit crops, on the whole, are satisfactory. Apples are very good and Pears a medium crop. Most bush fruits are yielding well, particularly Gooseberries and Black Currants. The Strawberry crop was very good despite the very severe frosts experienced at the end of April, when all the early flowers were destroyed. Three varieties which do well here are Royal Sovereign, King George and The Duke. There does not appear to be very many Plums in this district, no doubt owing to the late frosts. *A. E. Jackson, Normanby Park Gardens, Scunthorpe.*

NORFOLK. — The year, 1927, will, I think, so far as Norfolk South district is concerned, go down as one of the worst on record for hardy fruits, for after about six weeks of cold, east winds and frosts, most of the fruit blossom failed to set. At this date, Plums, Apples and Pears are dropping freely and are late in maturing. Strawberries and Black Currants have suffered most amongst the small fruits from the adverse weather of spring. All fruit trees are clean and free from aphides. The soil is very light in texture and overlying sand and gravel. *G. Barrell Merton Hall Gardens, Watton.*

——The Apple crops promise to be about average, in spite of the unfavourable weather at flowering time. Many Apples dropped during their second swelling, and this applies to all varieties. Those carrying good crops are Warner's King, Doctor Harvey, Keswick Codlin, Wellington, Vicar of Beighton, Allington Pippin, Norwich Pippin, Worcester Pearmain, Blenheim Pippin and James Grieve. Those carrying light crops are Lord Derby, Lane's Prince Albert, Newton Wonder, Peasgood's Nonesuch, Annie Elizabeth, Cox's Orange Pippin, King of the Pippins and Court Pendu Plat. Pear trees set good crops on walls, but all these fruits have fallen in the open. Plums are plentiful on wall trees. Raspberries are an excellent crop, but the yield of other small fruits is poor. We registered 8° of frost on the last morning in April, also on the first morning in May. May and June were cold, wet and sunless, the winds generally being east to north-east. *Isaiah Johnson, Catton House Gardens, Norwich.*

SUFFOLK.—It is somewhat surprising that after frosts of such severity as were experienced in this locality during the last week in April, there is any fruit to record at all. Examination of Apple blossoms showed stamens and pistils black, even in unopened flower buds, yet many trees, especially in sheltered situations, have a fair crop of Apples. Pears are a complete failure, and Plums, although the blossoming period was over when the frosts occurred, failed to set. Currants and Gooseberries lost quantities of berries but those left have finished well owing to the wet weather in June. Strawberries have been disappointing; frost destroyed the leading berries on the trusses, and wet weather rotted the berries in the beds. *E. G. Creek, County Horticultural Instructor, Abbey Ruins House, Bury St. Edmunds.*

(*To be continued*).

THE VINERY.

MIDSEASON Grapes are ripe or approaching ripeness, and damping the floors, etc., should be almost discontinued unless hot, dry weather necessitates the promotion of atmospheric moisture, when damping once a day will suffice.

The weather up to the time of writing has not been favourable for the ripening of Grapes, and it has been necessary to use a little fire-heat to maintain a free circulation of air and to prevent moisture from condensing on the berries. Shanked berries will be prevalent this season if the borders are in an exhausted condition, and preparation should be made to renovate them. Obtain a supply of good fibrous loam, mortar rubble, wood-ash and charcoal in readiness, adding one barrowful of the three last-mentioned materials to every cart-load of loam, which should be chopped up roughly, and bone-meal and half-inch bones at the rate of one peck to each cart-load of the compost. So soon as the Grapes are harvested, fork out the old surface soil down to the roots and substitute the fresh compost. Young, fibrous roots will develop freely in the new soil before the leaves fall, and the rods will attain fresh vigour.

If it is necessary to lift the vines and renew the border entirely it would be wise to defer this until September, when all the old soil should be carefully taken away. During the time the roots are exposed they should be sprayed on frequent occasions. First put the drainage in order and then spread a layer of turf grass downwards over it. Add the new soil about the roots after the latter have been placed in position. Make the soil of the border very firm, and when the work of planting is completed syringe the vines on sunny days and shade them if necessary. *E. Neal.*

HOME CORRESPONDENCE.

New Irises.—Our attention has been drawn to the fact that, in publishing the list of varieties of Irises which gained awards in the recent R.H.S. Iris Trials at Wisley, the two varieties "Mystic" and "Tenebrae" are included without any indication that these two varieties were raised by Mr. A. J. Bliss. We feel sure that this omission is due to your receipt of the list of awards from the Royal Horticultural Society without this information being stated, but we think it is only fair that Mr. Bliss should have the credit due to him for raising these two fine varieties, and we hope you will find it possible to state in your journal that these two Irises were raised by him. We have already written to the Royal Horticultural Society pointing out the omission in their report. *The Orpington Nurseries Co., Ltd.*

Spring Bedding.—As bulb catalogues are arriving almost daily, a suggestion for colour schemes may prove useful. The main colour effect in beds of Tulips should be provided by the dark coloured varieties, and these should be interplanted with rows or groups of a contrasting colour, while the carpeting of the bed may be either Myosotis or Polyanthus. Artus, a dark scarlet, early, single Tulip, would look well interplanted with White Swan or King of the Yellows. The Darwin Tulips lend themselves to this method. Plant the black varieties La Noire and Zulu, using, for contrast, Loveliness, carmine rose; White Queen, or Inglescombe Yellow. *L. Le C. T.*

Mitraria coccinea.—Although this charming shrub does not appear to be included in Mr. W. J. Bean's great work, *Trees and Shrubs Hardy in the British Isles*, I have grown it for a good many years and never known it to suffer more than slight injury from frost—and 15° to 20° are not infrequent here. A light, very gritty soil may explain this to some extent, but the fact that M. coccinea undoubtedly enjoys the overhanging shelter of some neighbouring evergreen is, of course, very helpful in carrying it through the winter. That this Chilian shrub, which was introduced in 1848, should delight in considerable shade, even a north aspect, need not surprise one, since that partiality is a well-known characteristic of many shrubs and plants of Chili. But I have often been impressed by the manner in which M. coccinea will seek any shade that is within reach by thrusting out yard-long, semi-prostrate branches into this sunless region, while the rest of the shrub will remain close and stunted. Nor is this trait inimical to a free production of the beautiful vivid scarlet flowers, which are often borne in abundance on plants which never get any sun, save, perhaps, in late evening in full summer. The late Mr. E. Charles Buxton grew and flowered this shrub well in the company of Philesia buxifolia on the north side of a large Yew, and another friend had it placed among rather dwarf Rhododendrons through which it thrust long branches which blossomed with delightful freedom. In a shrub which is not considered hardy this affection for shade and shelter is obviously a most commendable virtue. *A. T. Johnson.*

Ex-Service Gardeners.—May I appeal, through *The Gardeners' Chronicle*, to employers to give a fairer chance to ex-service gardeners. We willingly gave our services to the country and were ready to sacrifice our lives; therefore it is not too much to ask that those of us who are capable, all-round men, honest and keen on our work, should be given that chance we long for. I believe I have the skill and knowledge for a reasonable post, but at thirty-seven years of age I find myself rejected in regard to applications. I am partially deaf and have that facial pallor that is caused by extremes of climates, *i.e.*, service in Mesopotamia and Siberia—one in blazing sun the other 50° of frost—therefore, would-be employers often say I am unsuitable, or do not look strong. I have seen ex-policemen with good pensions given jobs that ex-service gardeners should have. I have a small pension, but insufficient to enable me to rent a piece of land and cottage that would offer the chance of a living. *J. M.*

SOCIETIES.

SOUTHPORT FLOWER SHOW.

THE Southport Flower Show is an established horticultural function, notwithstanding that it is only four years old. We cannot remember any other exhibition, commenced on such extensive lines as this, and certainly none other big show that was an unqualified success right from the start. Foresight, enterprise, generous dealings with all concerned, and kindly forethought for exhibitors, judges and pressmen have combined to make Southport an annual Mecca for thousands of horticulturists drawn from many parts of the British Isles. Exhibitors have found Southport Show a good opportunity for business, and this, together with the considerate treatment they receive, induces them to attend year after year.

The show held on August 24, 25 and 26, in Victoria Park, was magnificent; it was larger and finer than its predecessors, and there was a general all-round improvement in the quality of the displays. Competition was good in the majority of classes, and, although Orchids were exhibited considerably and well, it was regrettable that there was only one exhibitor in each of the classes provided.

The avenue of groups arranged for effect presented a fine sight; Roses were well displayed, fruits were uncommonly good, Gladioli made huge splashes of colour, Carnations have seldom been seen in finer condition, floral designs excited a great deal of attention and the rock gardens were, as usual, a fine feature.

The non-competitive exhibits were of a high standard of merit, the outside gardens being more extensive than usual. Garden furniture, topiary and horticultural sundries contributed to the general interest and effect. Within the big five-spanned tent the leading seedsmen and nurserymen arranged splendid exhibits that would have been considered first-rate even at a Chelsea Show.

All concerned in the conduct of the show are so kindly and courteous that criticisms have to give place to congratulations, and these we offer to every official, because all contributed to the success achieved and got through a vast amount of work in the pleasantest possible fashion, and appeared to thoroughly enjoy doing it. A few of the Southport folk deserve special thanks, *i.e.*, Mr. E. Clayton, who has been Chairman of the Flower Show Committee from the first, is a capital organiser, and an untiring, cheerful worker; Alderman Wood, the Vice-Chairman, whose winning personality is a great asset to the function; Alderman Aveling, who was Mayor during the first year of the show and is as enthusiastic and hard-working as ever; Mr. Crankshaw, a man of tremendous energy and wonderful geniality; Mr. W. Clark, Parks Superintendent and Show Superintendent, a big and large-hearted man and a great smoother-out of difficulties; Mr. Wolstenholme, the Secretary, who never obtrudes himself, but whose efficiency is beyond question; and, lastly, the Mayor, Mr. G. H. Hibbott, J.P., who has kindly words for every exhibitor, and we believe for every assistant, thus maintaining that fine spirit of cameraderie that is so outstandingly characteristic of Southport Flower Show.

The attendance at Southport, as recorded by the turnstiles, was 84,087, as compared with 67,514 in 1926. Before the show opened £500 worth more of tickets were sold than in 1927, and the whole takings were far in excess of previous years. Success leads to success, and we understand that a permanent steel and glass building may be built to take the place of the present huge canvas erection. There were two-and-a-half acres of available space under canvas at Southport Show this year!

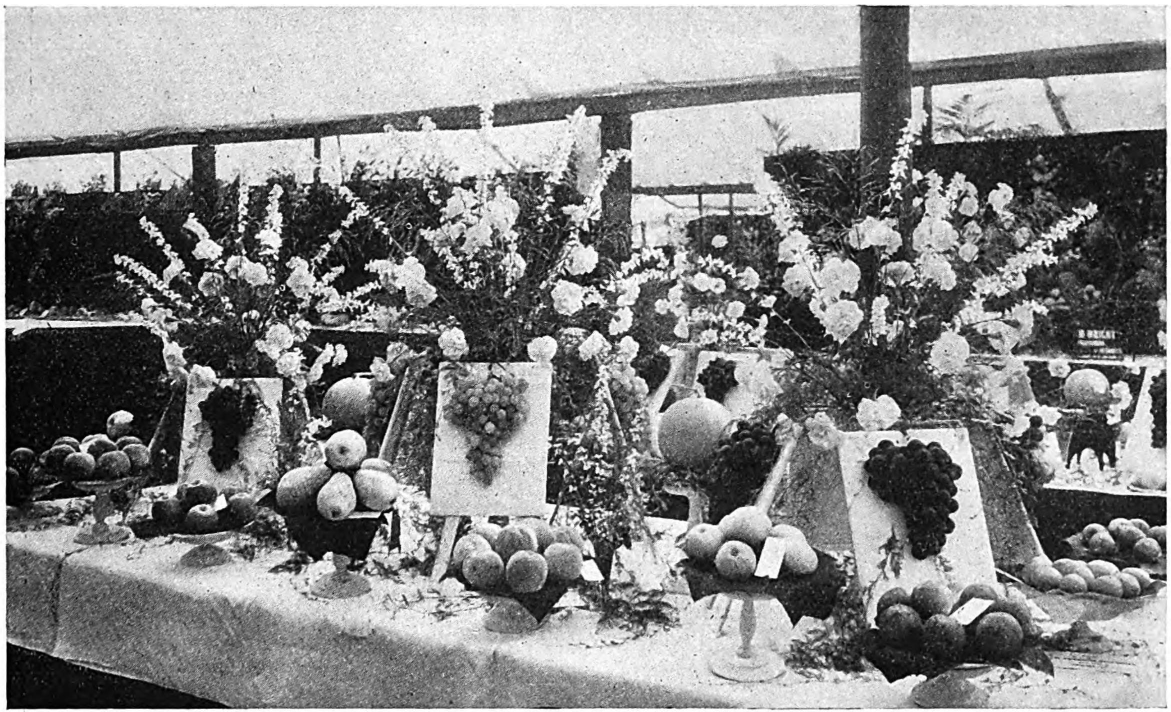


FIG. 89.—SOUTHPORT SHOW: CHAMPION DECORATED TABLE OF FRUIT.
Exhibited by the Duke of Newcastle.

GROUPS.

The avenue of groups was once again a splendid feature of the Southport Show. There were eleven big groups of artistically arranged plants, one set of foliage plants only, and the other of foliage and flowering plants.

In the class for flowering and foliage plants, the space allowed each competitor is 300 square feet, so this permits of a large, effective and interesting display. The competition for the £50 and the Southport Cinema Trophy which constitute the first prize, was very keen, and these awards were obtained by Messrs. JAMES CYPHER AND SONS with a delightful arrangement of fine Palms, Acalyphas, highly-coloured Codiaeums, Caladiums, Humeas and Begonia Rex varieties, these forming a grand setting for elegant plants of Lilium auratum, L. speciosum, L. s. album, Francoa ramosa, Gesneras, Fuchsias, Laelio-Cattleyas, Laelia elegans (two fine plants), Cattleya Loddegesii, Cypripedium Maudiae, Oncidium incurvum, Dendrobiums and Odontoglossums. Tiny Coleus, Begonias, Ferns and moss made a pleasing finish along the margins.

Second prize was won by Mr. W. HOLMES, Chesterfield, whose examples of Codiaeum Prince of Wales were particularly bright and elegant. Mr. HOLMES made good use of Ixoras, Clerodendron fallax, Lilium auratum, L. speciosum and L. Henryi, Nandina domestica and Cattleya Loddegesii—a very handsome exhibit. Third prize was obtained by Sir GEORGE KENRICK (gr. Mr. J. Macdonald), Whetstone, Edgbaston, with a very pretty group in which Vanda coerulea, Dendrobium superbiens, Cattleyas, Oncidiums, Kalanchoe and Gesneras were leading features; some fine Codiaeums were also included. Fourth, Mr. W. R. MANNING, Dudley; fifth, CHEADLE ROYAL MENTAL HOSPITAL (gr. Mr. A. Falconer), Cheadle; sixth, Mr. T. M. PETCH, Bradford.

Messrs. J. CYPHER AND SONS were also awarded the Brunner Cup, offered for the best competitive exhibit in the show, and the award was made to their first prize exhibit in this great class.

A space of 250 square feet was allowed for a group of foliage plants, where the premier award was the new Challenge Trophy presented by Alderman W. E. Bean, and £35 in cash. These honours were won by Mr. W. HOLMES, whose Codiaeums were very highly-coloured and artistically disposed with Caladiums, handsome plants of the bright and elegant Nandina domestica, Alocasias, Palms, Coleus, Dracaenas, foliage Begonias and Phyllanthus. The background of this group was particularly well arranged.

Second prize was won by Messrs. JAMES CYPHER AND SONS, whose display lacked colour as compared with the first prize exhibit; there was also a little weakness in the background, but it was a fine group, nevertheless. Third, Sir GEORGE KENRICK; fourth, Mr. W. R. MANNING, and fifth, Mr. T. M. PETCH.

ORCHIDS.

In the competitive Orchid classes there were few competitors; indeed, only one came forward in each class. In the amateurs' division the Vestey Challenge Trophy and first prize were awarded to J. B. ADAMSON, Esq. (gr. Mr. J. Howes), Townley Grove, Blackpool, for a display on a space twelve feet by four feet (Fig. 90). This was a very handsome effort, containing over fifty Cattleyas, of which C. June var. Queen Empress, C. Vesta, C. Hardyana, C. H. alba, C. Hassellii alba, C. Kienasteana alba, and C. Lady Veitch were excellent, while Laelio-Cattleya Carmencita, L.-C. Profusion, L.-C. Queen Mary, and the brilliant L.-C. Minosa were conspicuous. Epidendrum vitellinum majus, Cypripediums, Oncidiums, Odontoglossums and Odontiodas were also included.

In the smaller group class the premier award went to G. V. Llewelyn, Esq., Norwood Avenue, Southport, whose exhibit contained Vanda coerulea, Cattleya Hardyana alba, Cypripediums and Laelio-Cattleyas.

Mr. Adamson was also awarded first prize for six Orchids, for good examples of Cattleya Lorna var. Princess Royal, C. Hardyana var. Jupiter, Laelio-Cattleya Britannia var. alba, L.-C. Fowleri var. Mammoth, Cypripedium Rossetti and Odontioda Madeline. The same exhibitor obtained first prize for three Orchids, showing Odontioda Romany, Cypripedium Maudiae and Laelio-Cattleya Hassallii alba.

The Hartley Challenge Cup for a display of Orchids arranged on a space twenty feet by four feet, was awarded to Messrs. J. and A. McBean, who were equally successful a year ago. The display was beautifully arranged, the arching spikes of Odontoglossums and Odontiodas forming a fine background for splendid plants of Laelio-Cattleya Profusion in variety, Cattleya Luigae, C. Sibyl, C. Eleanore, C. Aeneas, C. Dowiana alba, Brasso-Cattleya Ilene, Miltonia vexillaria var. Queen Alexandra, Vanda coerulea, and the graceful Oncidium Leopoldii.

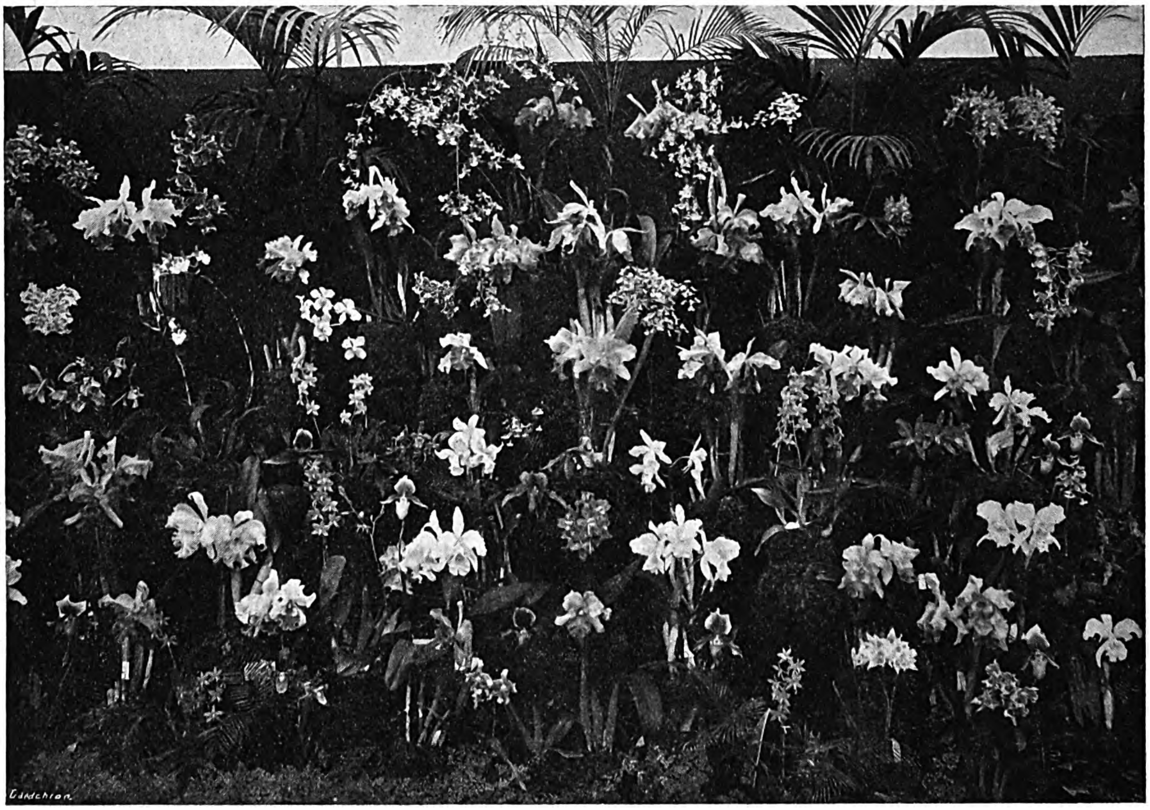


FIG. 90.—SOUTHPORT SHOW: MR. J. B. ADAMSON'S FIRST PRIZE GROUP OF ORCHIDS.

Hardy Flowers.

There were three competitors for the trophy presented by the Southport Chamber of Trade, and £20, which formed the first prize in the class for a display of hardy flowers arranged on a space of 300 square feet. Premier honours were made in favour of Messrs. Bees, Ltd., who put up one of their first-rate displays of splendidly-grown flowers; the arrangement was grand, and if there was a trifle of crowding this was compensated for by the artistic use of Kniphofias, Liatris pycnostachys, Hollyhocks, Lilium triginum, L. speciosum, Crinum Powellii album, and the deep scarlet Lobelia Huntsman, all of which were raised well above the masses of Scabious, Pyrethrums, Montbretias, Gladioli, Heleniums and Phloxes. Messrs. G. Gibson and Co., Leeming Bar, were second, with a flatter arrangement wherein Verbascums, Phloxes, Gladioli and Poppies were outstanding features; third, Mr. W. Sydenham, Melbourne, Derby.

A splendid class was the one for a group of perennial, annual and bulbous flowers, arranged on a space of 300 square feet. A very fine display by Messrs. M. Prichard and Son, Christchurch, won the first prize and Silver Challenge Cup; in this group there were grand sheaves of Lilium tigrinum, Crinum Powellii, C. P. album, Poterium obtusum, Artemisia lactiflora, Kniphofia Lord Roberts, Thalictrum dipterocarpum, Agapanthus umbellatus and Gladioli in variety. Second prize was won by Messrs. Harkness and Sons, Beadle, whose examples of Lobelia Tupa, Kniphofias, Montbretia His Majesty and Gladioli were particularly good; third, Mr. K. Thirkildsen.

One big tent was well filled with smaller exhibits of Gladioli (very fine), Roses, Phloxes, annuals, Hollyhocks, Dahlias, border flowers, Asters, Antirrhinums and Sweet Peas.

Rock and Water Gardens.

Competition was again keen in the prominent and popular class for a rock and water garden arranged on a space of 750 square feet. The premier award is £75, and the winner is the holder, for the year, of the Southport Corporation Cup. The winners on this occasion, as in 1926, were Messrs. T. R. Hayes and Sons, Keswick and Ambleside, whose design was a very beautiful one. A tiny stream and little lakelets occupied, irregularly, the centre of the scheme, and the rocks on either side and around were beautifully weathered, with moss, lichen and even tiny plants in position as when they were on the moors. Dark Pines formed a suitable background, while groups of dwarf Campanulas, Primulas, Heaths and various hardy Ferns appeared quite naturally in suitable positions, with here and there a little colony of small, erect Junipers, Pines and Cotoneasters. The whole arrangement was simple, artistic and natural.

The second prize was awarded to Mr. K. Thirkildsen, Southport, for a pleasing arrangement wherein Ericaceous plants were used freely in the higher portions and Campanulas in the lower levels; third, Garden Supplies, Ltd., Liverpool; fourth, Mr. E. J. Rigg Kew Nurseries, Southport; fifth, Messrs. Hodsons, Nottingham.

Roses.

The leading Rose class required a display forty feet by four feet. The premier award, including the Winterbottom Cup, was won by Messrs. Bees. Ltd., with a very effective group of clean flowers set out in baskets, low bowls and pillars; Golden Emblem, Emma Wright, Betty Uprichard, Mrs. H. Stevens, Dr. Hawksworth, Venus and Mabel Morse were all shown in quantity in big baskets.

The Challenge Trophy offered for a display of Roses on an area of twenty feet by four feet—an open class—was won by Mr. T. Robinson, Nottingham, with a brilliant display wherein a big basket of Sovereign was the centrepiece. Around this were pillars of Shot Silk, Angele Pernet, Donald McDonald, Independence Day, Lord Charlemont, Christine and Mrs. Henry Bowles.

Mr. J. Mattock, Headington, secured the first prize for a group of Roses arranged on a space of twenty feet by four feet; he filled this area with bowls and low stands of Independence Day, Shot Silk, Mabel Morse, Lady Inchiquin, Hortulanus Budde and other good sorts; second, Mr. R. Wright, Formby.

Messrs. S. McGredy and Son, Portadown, secured a trophy and first prize for a new seedling Rose—the deep, rose-pink Mrs. A. R. Barraclough; this firm also showed many others of their new Roses, notably Desmond Johnson, Cherry, Marion Cran, Margaret McGredy, and Portadown Cerise. Messrs. Wheatcroft Bros. showed the new Rose Princess Elizabeth in quantity on this occasion; this has soft yellow, cerise-shaded flowers.

Los Angeles, Gwynneth Jones and Madame Butterfly were the varieties with which Messrs. Wheatcroft Bros. led for three baskets of Roses. Mr. J. Mattock led for three baskets of decorative varieties with Los Angeles, Betty Uprichard and Mrs. H. Morse, and the same competitor had the best two dozen blooms, in boxes.

Messrs. Thomas Smith and Sons, Stranraer, exhibited the best twenty-four exhibition Roses and the best single basket of blooms of one variety, showing the deep crimson Earl Haig.

In the amateurs' section, Mr. G. Marriott won a Silver-gilt Medal and first prize for a representative group of cut Roses displayed on a space five feet by four feet. He had a very brilliant exhibit wherein were numerous excellent flowers of K. of K., Mabel Morse, Gwynneth Jones, Shot Silk and Golden Emblem, all finely arranged.

Dahlias.

The best display of Dahlias, set up on a space forty feet by seven feet, was the arrangement made by Mr. H. Woolman, Shirley, Birmingham, whose brilliant group secured a Challenge Trophy and cash award. Tall stands and low bowls of handsome flowers arrested attention, and among large-flowered varieties a few of the finest were Mrs. W. Jackson, Torchlight, Amun Ra, Thos. Hay, President Wilson, Andreas Hofer and R. Troughton, the last a fine buff-pink Cactus variety. Second, Messrs. Jarman and Co., Chard, who showed Barbara Jacobs, Andreas Hofer (pink and cream), Lenny, Lucius, and Rosie Supreme, in fine condition.

In another class, for a display of Dahlias shown without the use of artificial supports, Mr. H. Woolman won another Challenge Cup and first prize, and here the outstanding varieties displayed in big stands of a variety were Mrs. E. Cant, Pink Favourite, Ullswater, Menny Carlie, The Clown, Fireflare—a very vivid scarlet—H. B. May, Andreas Hofer and Trentonian, all large-flowered sorts carrying their blooms on fine, long, stiff stems.

Gladioli and Carnations.

Gladioli were exhibited largely in competitive classes and in non-competitive groups, but no better demonstration could be found of the popularity of these easily-grown garden flowers than that afforded by the class for a collection of primulinus varieties and hybrids arranged on a space thirty feet by seven feet, with a maximum height of seven feet above the staging. There were six competitors, the Stevenson Trophy and first prize being won by Messrs. Bees, Ltd., with a very fine display of well-grown spikes arranged in baskets of various sizes; second, Messrs. W. Artindale and Son, Sheffield, who staged capital spikes in blue vases and made a very attractive exhibit; third, Messrs. Hewitt and Co., Solihull; fourth, Messrs. W. J. Garner and Son.

Mr. Mair is a wonderful grower and raiser of large-flowering Gladioli, but he defeated himself on this occasion by failing to observe that Class 9 required a display "for effect" on a space of 100 square feet. He had the finest flowers and the finest spikes, but his arrangement was extremely poor, and so he was unplaced The first prize was awarded to Messrs. Bees, Ltd., who displayed good spikes in great sheaves and baskets, and disposed the whole effectively; second, Messrs. W. Artindale and Son; third, Messrs. Hewitt and Co.; fourth, Mr. H. Prins. In this class a clear space of two feet between the various exhibits would have increased immensely the effectiveness of the displays as a whole.

Mr. Charles Wall led for a display of Carnations on a space ten feet by four feet, and won a Challenge Cup with a brilliant group of Topsy, Sunstar, Laddie, Saffron, Mrs. C. W. Ward, White Wonder and Mrs, Ives, all represented by handsome blooms; second, Messrs. Keith Luxford and Co., Sawbridgeworth.

Sweet Peas, Pansies and Violas.

An interesting competition was the one where the competitors had to fill a table, twelve feet by six feet, with Sweet Peas arranged in any kind or kinds of receptacles. There were five entrants, and the winners of the Rowntree Challenge Cup and first prize were Messrs. W. Scott and Son, Styal, Cheshire, whose bold display, chiefly in baskets and bowls, was very effective. For the time of year, the flowers were clean and good, and such varieties as Ivory Picture, Sybil Henshaw, Royal Pink, Powerscourt, Elegance, Charming and Fortune were capitally shown. Second, Messrs. Herd Bros., Penrith; third, Mr. W. Weaver, Mold; equal fourth, Mr. W. E. Sands, Lisburn, N. Ireland, and Mr. R. Wright, Formby.

In other Sweet Pea classes the leading prize-winners were Mr. Simon Richards, Cefn Mawr, Wrexham; Mr. John Walmsley, Ainsdale; Mr. John Grigor, Banff, who won the Batty Challenge Trophy, and was leading prize-winner in the "colour" classes; and Miss K. A. Hughes (gr. Mr. J. F. Hughes), Gresford.

The principal prize-winners in the Pansy and Viola classes were Mr. E. Clegg, Dewsbury; Mr. F. Denton, Dewsbury; Mr. W. Ingram, Great Barr; Messrs. Sanderson and Upton, Sheffield; Mr. J. S. Jackson, Whaley Bridge; Mr. G. A. Fidley, Stockport; Mr. Herbert Bairstow, Bradford—invariably a leading prize-winner in classes for show Pansies and Violas; Mr. J. Mathews, Pumpherston and Mr. H. Robertson, Kelty.

Floral Designs.

No fewer than four competitors came forward in the class for a group of floral designs, *i.e.*, baskets, bouquets, bowls, vases and stands of flowers, and here the premier award was made in favour of Mr. R. F. Felton, Hanover Square, whose beautiful exhibit (Fig. 80) attracted a vast amount of attention and was greatly admired. A few outstanding designs included a mirror framed in mauve Stock, with Cattleya Hardyana alba at the top right-hand corner, and a grouping of these flowers at the bottom left-hand corner; a basket of blue Hydrangeas and soft yellow Roses; a vase of Anthuriums (Andreanum varieties), Nepenthes and Haemanthus Katherinae; a basket of the blue Vanda coerulea and Laelio-Cattleya Profusion; and a gorgeous basket of Cattleyas, Odontoglossums and Cypripediums.

Second prize went to Messrs. Bees, Ltd., who had a capital display that contained a glorious "shoe" of orange Marigolds, with the opening filled with yellow and bronze Chrysanthemums and Lilium tigrinum. The telephone cover, composed of brown centres of Rudbeckias, yellow Marguerites and blue Cornflowers, was quaint and delightful; third, Mr. Charles Vickers, Leicester.

The best basket of cut flowers was a gorgeous design in Cattleyas, yellow Oncidiums, Francoa sprays, Anthuriums, Gloriosas, Odontiodas and Codiaeum leaves from Messrs. Garner; second, Mr. J. Nixon, and third, Mr. Charles Vickers, the last showing Gerberas, Oncidium macranthum and buff Carnations.

In the bouquet classes, Messrs. W. J. Garner and Son led for a bride's and two bridesmaids' designs, the former in white Cattleyas, Gardenias, Odontoglossums and Francoa ramosa, and the other two of Gloriosas; second, Mr. W. Hall, Liverpool; third, Mr. C. Vickers. The last named led for a hand bouquet of coloured flowers, with purple, mauve and white Cattleyas and Odontioda sprays; Messrs. A. Adshead and Son, second.

The best bowl of cut Roses was arranged by Mr. Falconer, Cheadle Mental Hospital. Miss Nixon had the best decorative basket of Dahlias.

Table Decorations.

Table decorations were a large and interesting feature, nearly fifty tables filling the centre of one large tent.

A sumptuously rich design won for Mr. R. F. Felton the premier award in the class where Orchids only were allowed. There were four competitors. Mr. Felton's centrepiece had a base of white and yellow Cattleyas with a few small spikes of red Odontiodas and a couple of Cypripediums rising well above the rest. The upper part was composed of yellow Cattleyas which formed a base for arching sprays of Odontiodas, Cochlioda Noetzliana, and two spikes of Brassias. Two of the corner-pieces consisted of yellow Cattleyas of the Venus type, with short spikes of Odontiodas and Oncidiums; the two other corner-pieces consisted of mauve-purple Cattleyas and Cypripedium niveum. Except that the corner-pieces were a trifle too large for the size of the table, we have nothing but congratulations to offer the wizard of Hanover Square on this wonderfully beautiful table decoration which also secured the Championship Trophy as the finest table decoration in the whole Show.

Miss Nellie Gibson, Welbeck, Worksop, was a good second to Mr. Felton, and she had a fine arrangement of purple and mauve Cattleyas, with Cypripedium Maudiae, Odontiodas and Oncidium incurvum added in the centre-piece. Third prize was awarded to Mrs. J. Nixon; and fourth to Mrs. Charles Vickers.

In a class where the selection of flowers was optional, Mrs. John Nixon led with a light and pleasing arrangement of small, golden plumes

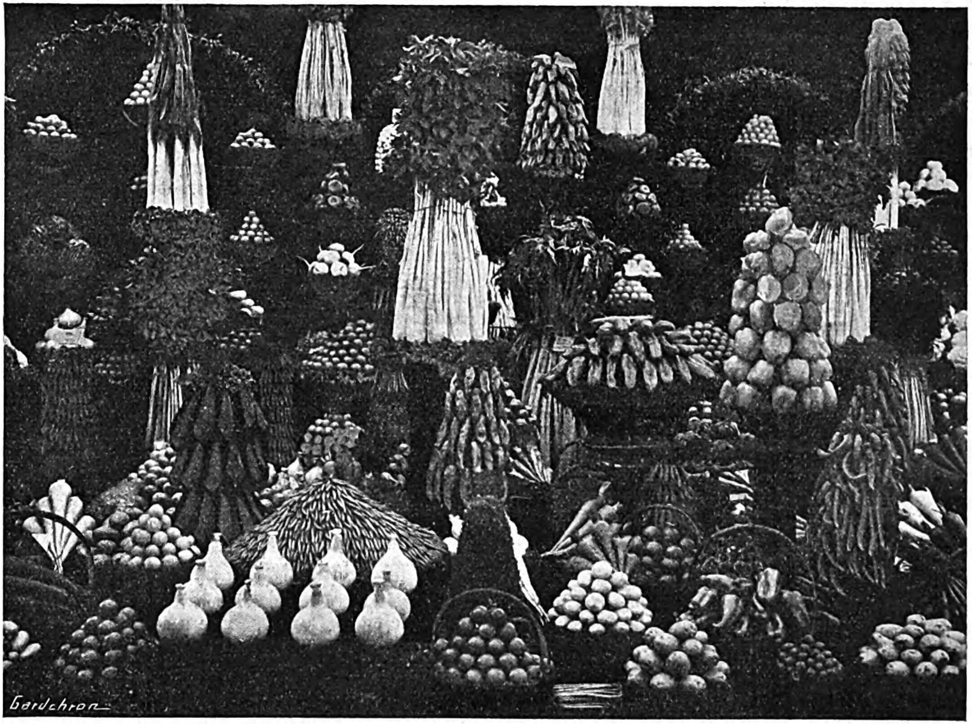


FIG. 91.—SOUTHPORT SHOW: PORTION OF MESSRS. SUTTON AND SONS' VEGETABLE EXHIBIT.
The premier non-competitive display.

of Celosias, Gloriosas, Francoa, Humea sprays and Selaginella; Mr. S. Warren, Darwen, second.

The best table decoration of Roses only was a charming set of low bowls of the lovely Emma Wright, arranged by Mrs. Courtney Page, Enfield; the half-dozen fronds of Maidenhair Fern were totally unnecessary in this beautiful design. Second, Mrs. John Nixon; third, Miss Newsham.

Mrs. John Nixon led for a table decoration of Pansies and Violas and showed how prettily those flowers may be arranged. Mrs. John Nixon also secured premier honours in another optional class, where she made good use of Montbretias and red Honeysuckle. Miss N. Warren second, with Orchids, Gerberas and Gloriosas. Mr. S. Warren was successful in another table decoration class.

COLLECTIONS OF FRUITS.

Among four competitors in the class for a decorated table of fruit, the new trophy offered by the Southport Hotels Association, and the first prize of £30, were won by the Duke of Newcastle (gr. Mr. S. Barker), Clumber, Worksop, with a total of 205½ points. This was a grand exhibit (Fig. 89) of Muscat of Alexandria, Appley Towers and Madresfield Court Grapes, Peregrine and Bellegarde Peaches, Humboldt Pineapple and Dryden Nectarines, Cox's Orange Pippin and Ribston Pippin Apples, White Marseilles Figs, Triomphe de Vienne and Souvenir du Congrès Pears, Jefferson Plums and Melons. In all there were twenty-four dishes of first-class fruit, decorated with blush Carnations and sprays of Francoa ramosa.

Lord Belper (gr. Mr. Jas. McCarthy), Kingston Hall, Derby, came second with 172½ points, showing finely-finished Muscat of Alexandria and Gros Maroc Grapes, good Peaches (Sea Eagle, very fine), Nectarines, Pears, Plums, Apples and Melons; third, Earl Balfour (gr. Mr. G. Anderson), Whittinghame, Haddington, with 164½ points, his set including Black Hamburg and Appley Towers Grapes and Souv. du Congrès Pears in fine condition. Fourth, Lady Cunliffe Lister, (gr. Mr. Bernard Gray), Swinton Park, Masham, Yorkshire, with 148½ points; this exhibit contained handsome clusters of Lady Hutt and Madresfield Court Grapes.

The best table of British or foreign fruit was submitted by Mr. T. Mawdsley, Southport, who showed a handsome table of Pineapples, black and white Grapes, Peaches, Nectarines, Canteloupe and English Melons, Oranges, Pears and Apples, nearly all arranged in gilded baskets. Second, Messrs. M. Wright, Ltd., Southport; third, Miss Newsham, Aughton.

There are great possibilities in a class for a basket of British and/or foreign fruit, but neither of the three competitors appeared to take full advantage of their opportunities to produce an artistic effect. Mr. Mawdsley won the first prize with a large flat basket containing Pineapples, Peaches, Melons, Grapes, Pears, etc.; second, Messrs. Bees, Ltd.; third, Messrs. M. Wright, Ltd.

GRAPES.

The new Trophy presented by the Mayor of Southport, E. H. Hibbott, Esq., together with a cash award of £25, made up the first prize won by the Duke of Newcastle for twelve bunches of Grapes in not fewer than four varieties. The collection consisted of heavy, large-berried, well-finished bunches of Muscat of Alexandria (11), 10, 9, 10 and 8½; Madresfield Court (10), 8, 8, 8½ and 9; Chasselas Napoleon (9), 7½ and 7½; Appley Towers (11), 8; Frankenthal Hamburgh (10), 9½; total 103½ points out of a possible 121—the figures within brackets indicate the maximum possible. This was a grand lot of Grapes.

Mr. Donald McInnes, Glamis Castle Gardens won the second prize with 101 points out of a possible 122, his Muscats being finely coloured; third, Mr. S. Gordon, Monreith Gardens, Whauphill, with 97¾ points out of a possible 117; fourth, the Kippen Vineyard Co., Forth Vineyard, Kippen, with 86 out of a possible 121 points; fifth, Captain France Hayhurst, (gr. Mr. A. H. Hall), Bostock Hall, Middlewick. The whole display in this class was one of the finest we have seen for some time past.

For four bunches of Grapes, Mr. W. Tizzard, Kirklington Hall Gardens, Newark, led with good bunches of Muscat of Alexandria and Alicante; second, W. Watson, Esq. (gr. Mr. David Andrie), Dunlop House, Dunlop, Ayrshire; third, F. G. Moore, Esq. (gr. Mr. J. McGeogan), Billown, Castleton, Isle of Man.

Mr. D. McInnes led for one bunch of black Grapes (for bloom) with a small, large-berried bunch of Gosford Black; the Duke of Newcastle, second, with Madresfield Court.

The best pair of bunches of Black Hamburgh Grapes were shown by Col. M. Hughes, Sherdley Hall, St. Helens (gr. Mr. J. Holland); second, Mr. S. Gordon. Col. Hughes had also the best bunch of Black Hamburgh. The Duke of Newcastle led for a pair of bunches of Madresfield Court with well finished clusters; Mr. S. Gordon, second.

Alicante Grapes were best shown by Mr. S. Gordon, with Mr. Tizzard second. For any other black Grape, Mr. S. Gordon led with heavy bunches of Alnwick Seedling; Mr. McInnes second, with Gros Maroc.

The best pair of bunches of Muscat of Alexandria Grapes came from the Duke of Newcastle, and they were medium-sized, highly-coloured clusters; second, Mr. W. Tizzard. Lord Belper showed the best single bunch of any white Grape—Muscat of Alexandria—while for any other white variety, Mr. S. Gordon led with Golden Hamburgh; Mr. Tizzard, second, with Buckland Sweetwater.

T. Henshaw, Esq. (gr. Mr. J. George), Roby, showed the finest dish of Peaches (Sea Eagle), and Mr. A. Mason was first for Nectarines with fine examples of Humboldt, and also first for Plums with Coe's Golden Drop. Mr. J. Drake, Market Rasen, had the best Apples, and the Duke of Newcastle the best dish of Pears.

VEGETABLES.

Vegetables were shown in fine condition both in the classes for collections and those for single dishes.

The open championship class for twelve distinct kinds of vegetables attracted a keen competition, and aroused a great deal of interest. The first prize in this class is £10 and a Silver Challenge Trophy presented by J. Larking, Esq. These were won by Mr. James Gibson, Welbeck, Worksop, with a handsome collection in which the Carrots, Beets and Parsnips were models of perfection in regard to form and freedom from blemish, although they were not unusually heavy examples. Ailsa Craig Onions, Snow-White Celery, Arran Chief Potatos, Cauliflowers, Tomatos, Runner Beans, Phenomenon Peas, Cucumbers and Leeks completed a splendid set. Second, Viscount Hambledon (gr. Mr. Turnham), Greenlands, Henley; third, Mr. W. Robinson; fourth, Mr. E. Alty.

Various seedsmen provide the prizes in certain classes for vegetables, and in these classes the competition was good, and the produce well-grown and capitally displayed.

For Messrs. James Carter and Co.'s prizes, Mr. A. Falconer, Cheadle Mental Hospital, led for nine distinct kinds; Mr. F. Emmott, Lancaster, second. For Messrs. Clibran's prizes, Mr. W. Robinson, Garstang, and Mr. Falconer, were first and second respectively. Viscount Hambledon, Mr. James Gibson and Mr. F. Emmott won, as placed, the prizes offered by Messrs. Sutton and Sons. Mr. Falconer and Mr. Emmott were placed first and second respectively for Messrs. Clucas's prizes, while Mr. W. Robinson and Mr. J. C. Battersby, Blackburn, were the most successful competitors in the class provided by Messrs. Toogood and Son.

Mr. W. Robinson again won the trophy and first prize offered for the best collection of six distinct kinds of vegetables, in a class for amateurs and others residing within twenty-five miles of Southport Town Hall; second, Mr. E. Alty, Ormskirk.

Competition was keen in the class for not fewer than ten heads of Cauliflower Champion of England, Messrs. J. L. Clucas, Ltd., offering the prizes. Some very fine heads were displayed, the best being shown by Mr. G. Rimmer; second Mr. J. Battersby.

Potatos were splendidly shown, especially in the class for a collection of twelve distinct varieties immune from wart disease. Mr. E. Taylor, Malpas, secured the chief prize with fine specimens of Edzell Blue, Di Vernon, Ally, Sefton Wonder, King George, Bishop, Catriona, Witch Hill, Majestic, Katie Glover, Arran Comrade and Dobbie's Unique; second Mr. H. J. Jones, Rustington.

The first of the prizes offered by Garden Supplies, Ltd., for three dishes of Potatos, was won by Mr. G. Hilling, Lowestoft, with fine examples of Majestic, Arran Comrade and Sefton Wonder.

SPECIAL CUPS AND TROPHIES.

"*The People*" *Challenge Trophy.*—To Messrs. Sutton and Sons, for the best non-competitive exhibit in the show (Fig. 91). This exhibit was a grand one of splendid vegetables set up in first-rate style.

Brunner Trophy.—To Messrs. James Cypher and Sons, Cheltenham, for the best competitive exhibit in the show.

Scenic Railway (Southport) Trophy.—To Messrs. T. Rivers and Son, Sawbridgeworth, for the best exhibit of pot-grown fruit trees and fruits in the show, competitive or non-competitive.

Boothroyd Challenge Trophy.—To Messrs. Kent and Brydon, Darlington, for the best formal garden in the show.

MEDAL AWARDS.

Special Gold Medal.—This award was made by the Show Committee to Messrs. James Carter and Co., for their combined display of flowers, Melons and vegetables; to Messrs. W. H. Gaze and Sons, Ltd., Kingston, for their Japanese water-garden and tea-house (Fig. 79); and to the Director of Education, Preston, Lancashire, for an educational exhibit of plant diseases, grafting, manurial experiments, etc.

Large Gold Medal.—To Messrs. Blackmore and Langdon, Twerton, for Begonias—a splendidly-grown lot of Begonias, the varieties and flowers wonderful; to Messrs. James Carter and Co., for a grand exhibit of vegetables, representing a very fine range of kinds, all grown in fine style and arranged on stands and tables in a distinct and attractive manner (Fig. 92); grand Melons in great variety were also shown; Messrs. Dickson and Robinson, Manchester, for a brilliant exhibit consisting chiefly of high-class Dahlias in great variety and Gladioli; Messrs. C. Engelmann, Ltd., Saffron Walden, for one of the best and most extensive displays of perpetual-flowering Carnations ever put up; Messrs. Kent and Brydon, for an extensive and well-designed formal garden in the open; the Kings Acre Nurseries, Hereford, for a collection of splendidly-grown and freely-cropped fruit trees in pots; the Kings Acre Nurseries, for Roses, early Chrysanthemums and Dahlias; Messrs. T. Rivers and Son, Sawbridgeworth, for a famous collection of fruit trees in pots—Peaches, Nectarines, Oranges, Lemons, Citrons, Grapes, Pears and Apples; Messrs. Sutton and Sons, Reading, for their grand display of vegetables; Mr. W. J. Unwin, Heston, for an unusually beautiful group of varieties of primulinus Gladioli; Messrs. R. Wallace and Co., Tunbridge Wells, for their Mirror Pool Garden—a great attraction among the outdoor exhibits; and to Messrs. E. Webb and Sons, Stourbridge, for a big and brilliant exhibit of hardy flowers consisting of over one hundred varieties.

Gold Medals.—To Messrs. Allwood Bros., for Carnations and hybrid Pinks; Messrs. R. Bolton and Son, Birdbrook, for Sweet Peas; Messrs. James Carter and Co., Raynes Park, for a huge garden of Asters, Begonias, Liliums, first-rate Gloxinias, Gladioli, Celosias, Ferns and Palms, with a large fountain in the centre; Messrs. Alex. Dickson and Sons, Newtownards, for a very large and attractive exhibit of beautiful Roses, Sweet Peas, and Carnations; Messrs.

Charlesworth and Co., Haywards Heath, for a large, choice and well arranged collection of Orchids; Mr. H. J. Jones, Lewisham, for a large collection of herbaceous Phloxes, including many new varieties, Kniphofias and Dahlias.

Silver-gilt Medal.—To the Backhouse Nurseries, York, for rock garden and alpine plants; Messrs. Barr and Sons, Covent Garden, for a capital collection of well-grown vegetables; Messrs. Daniels Bros., Norwich, for a bright group of Gladioli and border flowers in variety; Messrs. Dobbie and Co., Edinburgh, for excellent Potatos in variety, all admirably staged; Messrs. A. J. Keeling and Son, Bradford, for a pleasing exhibit of Orchids; Mr. Robert Lawrie, Carnwath, for Begonias in pots; Mr. James Macdonald, Harpenden, for a characteristic elegant and restful grass garden; Messrs. John Peed and Son, Norwood, for a display of stove and greenhouse plants; Mr. Amos Perry, Enfield, for an interesting water garden, bog plants and hardy Ferns and border flowers; Mr. L. R. Russell, Richmond, Surrey, for Clematis and other hardy climbing plants; Mr. T. Smith, Daisy Hill, Newry, for rare shrubs and hardy flowers; Messrs. Stuart Low and Co., Enfield, for Orchids; Messrs. Toogood and Sons, Southampton, for a representative collection of vegetables and hardy flowers; Messrs. James Vert and Sons, Saffron Walden, for stately spikes of fine varieties of Hollyhocks, admirably arranged in elegant vases; and to the Hon. G. E. Vestey, The Warren, Birkdale, for a group of Orchids and foliage plants.

Silver Medal.—To Messrs. Bakers, Codsall; Messrs. R. H. Bath, Wisbech; Messrs. W. Brown and Son, Ormskirk; Mr. H. Clarke, Taunton; Mr. J. Evans, Colwyn Bay; Messrs. Evans and Son, Peterborough; Messrs. E. F. Fairbairn and Sons, Carlisle; Messrs. John Forbes, Ltd., Hawick; Messrs. W. H. Gaze and Sons; Mr. Robert Hayes, Grasmere; Messrs. P. Johnson and Sons, Southport; Mr. J. Klinkert, Richmond; Mr. Robert Mason, Gateacre; Messrs. Middlehursts, Ltd., Liverpool; Mr. H. Prins, Wisbech; Messrs. W. H. Simpson and Sons, Birmingham; Mr. Sydney Smith, Enfield (Cacti); Mr. Robert Saul, Preston; Mr. W. Wells, Merstham; and Mr. E. H. Williams, Broad Green, Liverpool.

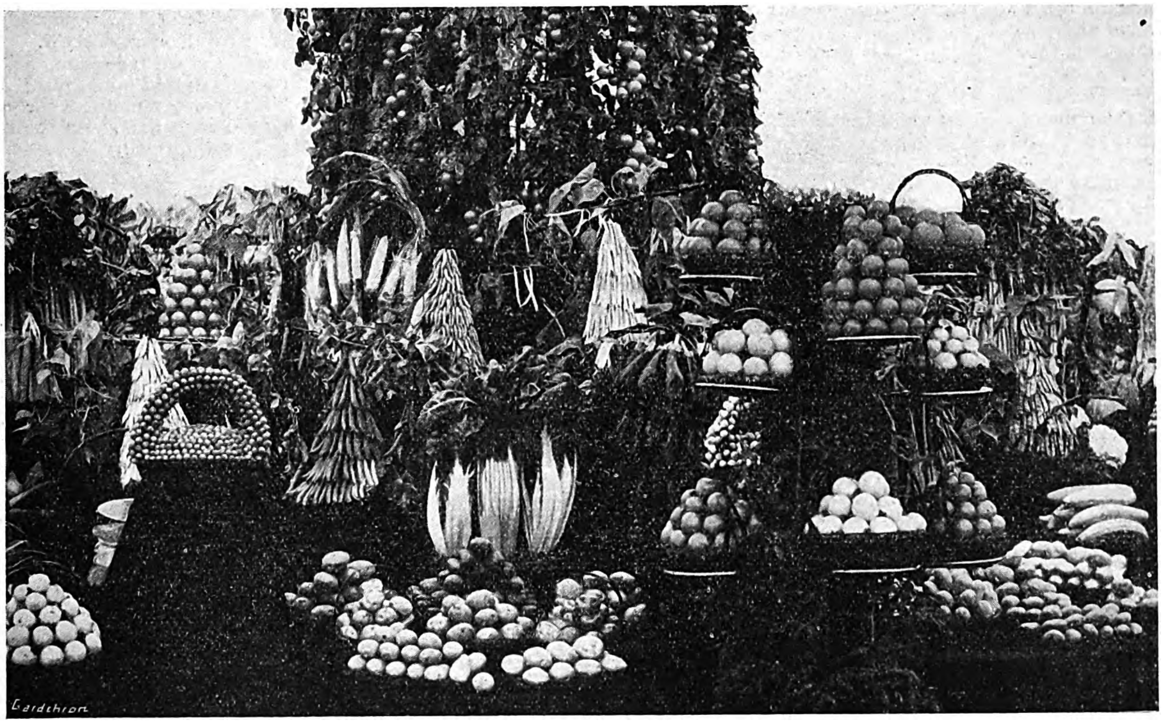


FIG. 92.—SOUTHPORT SHOW: PART OF MESSRS. JAMES CARTER AND CO.'S GOLD MEDAL EXHIBIT OF VEGETABLES.

ROYAL HORTICULTURAL.

August 30.—The fortnightly show of this Society at Vincent Square, Westminster, was distinctly brighter and more important than has been usual at this time of the year. The outstanding floral exhibit was the large and very comprehensive display of aquatics and allied plants arranged by Mr. Amos Perry. Other noteworthy floral features were China Asters, herbaceous Phloxes, general border flowers and Roses. Orchids were not largely shown, but there were several very good novelties. There was an excellent display of fruit trees and gathered fruits and several smaller exhibits of various fruits.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. S. Low, Mr. Fred. K. Sander, Mr. H. G. Alexander, Mr. A. Dye, Mr. Charles H. Curtis, and Mr. Richard Ashworth.

FIRST CLASS CERTIFICATE.

Laelio-Cattleya Canberra (C. Venus × L.-C. Litana).—A very handsome hybrid in which the broad petals and sepals are rich golden-orange and the lip shaded with crimson where the gold lines extend from the throat; the apex is ruby, edged with rose. Shown by Messrs. Cowan and Co.

AWARD OF MERIT.

Laelio-Cattleya Mrs. Chamberlain Chanler Westonbirt var. (L.-C. Lustre × L. purpurata).—A very attractive Orchid with bright, violet-purple sepals margined with mauve; pale mauve-purple petals, and deep, rich Tyrian-purple lip. Shown by Messrs. H. Alexander, Ltd.

GROUPS.

In the small group submitted by Messrs Sutton Bros. there were such interesting Orchids as Epidendrum prismatocarpum, Cypripedium Maudiae, Cattleya Mossiae var. Reineckiana, C. Thebes, Laelio-Cattleya Salonica, the old Odontoglossum Harryanum and various Miltonias.

Messrs. Charlesworth and Co. showed a small group that contained pleasing examples of Cattleya Hardyana alba, C. Iris, C. Helga, C. Lord Rothschild, the pure white Dendrobium Phalaenopis var. Schröderianum, Odontioda Melita Sophro-Laelio-Cattleya Katrina, the handsome Cypripedium Cranmore, Miltonia Venus, the dainty white, gold-masked M. gattonensis and Masdevallia Lowii.

Messrs. Sanders contributed Phalaenopsis violacea, Cypripedium Godefroyae, Cattleya Etta var. conspicua, the handsome, bronze and purple C. Thebes var. Luxor, and a plant of Odontoglossum grande carrying eleven fine flowers.

J. J. Bolton, Esq., Claygate, showed the fine chocolate and pink Odontoglossum Matador, and Messrs. H. Alexander, Ltd., sent a beautiful plant of Laelio-Cattleya Mrs. Chamberlain Chanler, Westonbirt var., with a spike of five handsome flowers. An exceptionally fine Butterfly Orchid—Oncidium Papilio var. Atlas—was shown by R. Ashworth, Esq., Newchurch; it carried two splendid flowers and is undoubtedly the finest form of this Orchid.

Messrs. J. Cowan and Co. exhibited two plants of Laelio-Cattleya Canberra (C. Venus × L.-C. Litana), each carrying one superb flower of rich golden orange colour, with ruby, rose and gold lip. The flowers were of fine size, form and substance.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. Arthur Turner, Mrs. Ethel M. Wightman, Mr. A. E. Vasey, Mr. H. J. Jones, Mr. James B. Riding, Mr. J. M. Bridgeford, Mr. M. C. Allwood, Mr. Courtney Page, Mr. D. Ingamells, Mr. Wm. Howe, Mr. Hugh Dickson, Mr. Donald Allan, Mr. George Churcher, Mr. D. B. Crane, Mr. E. R. Janes, Lady Helen Lindsay Smith, Mr. Charles E. Pearson, Mr. G. W. Smith and Mr. W. D. Cartwright, Secretary.

Section B.—Mr. Charles T. Musgrave (in the chair), Mr. W. G. Baker, Mr. T. Hay, Mr. L. R. Russell, Mr W. B. Cranfield, Mr. Mark Fenwick, Mr. E. H. Wilding, Mr. James Hudson, Mr. E. A. Bowles, Mr. Amos Perry and Mr. N. K. Gould, Secretary.

AWARDS OF MERIT.

Lobelia cardinalis var. Huntsman.—This is a very vigorous and showy variety. The stout, purplish stems and green leaves have the pubescence which is usually associated with

Lobelia fulgens. The flowers, which are freely produced, are of deep, rich scarlet colour. A large quantity of this very desirable variety was exhibited at the Southport Show last week. Shown by Mr. A. J. Macself, Domaris, Reading.

Montbretia Lady Wilson.—A very good, large-flowered variety of bright yellow colour, with a sheen of orange.

Montbretia R. C. Notcutt.—This is also a large-flowered variety, and its colour is a deep, fiery orange paling to a clear yellow in the centre of the flower. Both varieties were shown by the Hon. Mrs. Montague (gr. Mr. J. G. Fitt), Breecles Hall, Attleborough.

FOR TRIAL AT WISLEY.

Lobelia fulgens The Bishop, a very vigorous, half-hardy, herbaceous variety, with bright purple stems and foliage and crimson flowers. Sent by the Hon. and Rt. Rev. B. J. Plunket, St. Annes, Clontarf, Dublin. Gladiolus Langport Triumph, sent by Messrs. Kelway and Son, is a large-flowered variety bearing vivid, clear red flowers which have a creamy-yellow throat. Aster Rogers's Californian Giant strain appears to be an exceptionally vigorous strain of Ostrich Plume China Aster. The large flowers are very shapely and were shown in distinct shades of rose, rose-pink, blue and white. It was sent by Messrs. C. Engelmann, Ltd.

DAHLIAS FOR TRIAL.

The joint Dahlia Committee met during the morning and selected the following novelties for trial at Wisley.

Marmot.—A miniature Decorative variety of bright rose-pink colour, flushed with gold at the centre.

Nanette.—A large Decorative variety of bright mauve colour with a nearly white centre.

Saxon.—A long-stemmed Cactus variety of clear yellow colour, with an amber shading on the outer florets.

Golden Rod.—A well-set-up Cactus variety of clear yellow colour.

Mrs. C. Hancock.—An attractive Cactus variety in which the bright carmine florets are undulated.

Stedfast.—A bright, orange-crimson Cactus variety. The above were shown by Messrs. J. Stredwick and Son.

Red Rover.—A bright crimson Camellia-flowered Dahlia.

Lowfield Maroon.—A reddish-maroon Camellia flowered variety.

Mermaid.—A yellow, miniature Paeony variety. These three Dahlias were shown by Messrs. J. Cheal and Sons.

GROUPS.

A very extensive exhibit of exceptional interest and value was arranged by Mr. Amos Perry. In the centre he had many flowers of some of the best Nymphaeas of the Marliacea type floating in a long, shallow pool, backed by such handsome-foliaged bog plants as Xanthosma violacea, Thalia dealbata, Pontederia lanceolata and, at the ends, groups of Cannas. The chief Nymphaeas were N. Marliacea rosea, N. Eucharis, N. Gladstoniana, N. Frobeli and N. Rose Nymphe, the last-named of a very uncommon appearance. The petals are of delicate blush rose colour, and the stigmas are tipped with orange, making a distinct zone in the centre of the flower. This centre of Water Lilies was flanked by an exceptionally complete collection of Reeds, Rushes and other water-loving plants, while at intervals Mr. Perry had placed glass bowls of many floating aquatics, such as species and varieties of Elodea, Hottonea, Cabomba and Potamogeton. Additional interest was centred in these bowls by the little fishes swimming around in them. Besides small, golden carp there were sun-fishes, cat-fish, bitterling and golden orfe.

On a large floor space at the other end of the hall, Messrs. Sutton and Sons well illustrated the value of the many types of China Aster (Callistephus hortensis). This extensive exhibit made a gorgeous colour display and included batches of Ostrich Plume, Giant Comet, Giant Ray, Victoria, Anemone-flowered, dwarf Chrysanthemum-flowered, Mammoth, Giant French, and other types of the double-flowered varieties, together with Southcote Beauty and some splendid single Asters of rich colours.

Herbaceous Phloxes were again shown in quantity by Mr. H. J. Jones. On the present occasion he had profusely-flowered plants of Dr. Koningshofer, vivid orange-red; Fair to See, pale pink; Mrs. A. G. Cross, salmon; Mrs. Curwen, bright salmon; Winnie Magor, rosy-lilac; and Le Mahdi Improved. In addition to the Phloxes, Mr. Jones showed Tritomas, Helianthus Monarch and Dahlias. A collection of herbaceous Phlox was also shown by Messrs. E. F. Fairbairn and Sons, whose varieties included Triumph, purple; Attraction, salmon; The King, bright purple; Border Gem, rosy-purple; and Eden, salmon. A neat collection of general border flowers set up by Messrs. William Keep and Co., included herbaceous Phloxes, Lupins and Asters, and they also had an attractive little rock garden.

Mr. H. Hemsley again staged a collection of his new Sidalceas, which included several seedlings and some good named varieties.

In an attractive corner exhibit, Messrs. M. Prichard and Sons displayed herbaceous Phloxes, Tritomas, Delphiniums, Crinum Powellii and Poterium obtusum. Messrs. J. Cheal and Sons staged such varieties of herbaceous Phlox as Partheon, Grevin, Baron Heckeren, Europa and Avalanche, and also had a collection of Dahlias of the Cactus, Decorative, Star, Paeony and Pompon types.

Mr. F. G. Wood had an interesting and well arranged collection of seasonable border flowers, amongst which were Veronica subsessilis Hendersonii, a dwarf-growing variety, bearing large spikes of intense blue flowers, Tradescantia virginica rosea and Pentstemon Kellermannii. The Misses Hopkins had a pretty little rock garden. Messrs. Dobbie and Co. staged especially well-grown examples of African Marigolds Prince of Orange and Lemon Queen, bordered by the dwarf Legion of Honour.

Exceptionally tall stems of Lilium tigrinum splendens giganteum in the exhibit of Messrs. R. Gill and Son attracted attention and this firm also showed sprays of Clethra arborea, Berberidopsis corallina, Desfontainea spinosa, Lepageria rosea and Lambertia formosa. Messrs. Isaac House and Sons had several very showy Tritomas, especially T. nobilis and T. erecta, and a good collection of their Scabiosa caucasica varieties.

With a central row of Dicksonia antartica and various ornamental vines, Messrs. L. R. Russell, Ltd., grouped many pots of Clematis, including the varieties Comtesse de Bouchard, a free-flowering pink; Mrs. Cholmondeley, sparkling lavender; Jackmanni rubra and Marie Bousselor, a large white flower.

Goodly collections of greenhouse Carnations were displayed by Messrs. C. Engelmann, Ltd., and by Messrs. Allwood Bros. The former had vivid vases of Red Laddie, Rouge and Spectrum, while the latter included Laddie, Canadian Pink and Master M. Stoop.

Generously filled vases of Roses were arranged by several growers. Mr. J. H. Pemberton showed Pax, Los Angeles, Mermaid and W. F. Dreer. Messrs. B. R. Cant and Sons included Mrs. Herbert Stevens, Mrs. Beatty and Etoile de Hollande. Messrs. D. Prior and Son showed Betty Uprichard, Else Poulsen and Mrs. Henry Bowles, and Messrs. Frank Cant and Co. had good specimens of Los Angeles, Betty Uprichard, Golden Emblem and Salmon Spray.

An extensive collection of very fine Gladioli was again displayed by Messrs. Kelway and Son; Messrs. R. H. Bath, Ltd., and Messrs. H. Langridge and Co. also had good exhibits of the same flower.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Mr. E. A. Bunyard, Mr. W. H. Divers, Mr. George F. Tinley, Mr. E. Beckett, Mr. H. Markham, Mr. A. Metcalfe, Mr. A. Bullock, Mr. J. C. Allgrove and Mr. F. Jordan.

Mr. E. A. Bunyard showed fruits of Plums Bèjonnières and Gordon Castle. The former variety was raised one hundred years ago, but is little known in this country. It is a round, golden Plum of superb appearance, but the quality is disappointing. Gordon Castle is also a golden variety and of a curious pyriform shape. This variety does well in the north, and may be valuable for northern gardens.

Mr. J. C. Allgrove exhibited pot fruit trees and dishes of Plums. The majority of the trees were Plums, but they included a few of Lady Sudeley Apples and Williams's Bon Chrêtien Pears, together with a very finely trained Peach tree as a centrepiece at the back. The Plum trees bore large crops of such varieties as Belgian Purple, Jefferson, Allgrove's Superb, Count Althan's Gage, Giant Prune, McLaughlin's Gage, Victoria, Greengage and Early Transparent. The gathered fruits were superb specimens of Kirke's Blue, Jodoigne Green Gage, Early Transparent, Denniston's Superb, Washington, President and others.

Mr. H. Hemsley showed a small collection of fruits which included good specimens of Lady Sudeley, Worcester Pearmain, Early Victoria and Miller's Seedling Apples.

Mr. J. J. Kettle again exhibited Raspberries, and Messrs. Laxton Bros. The Veitchberry.

ANSWERS TO CORRESPONDENTS.

Galls on Roots.—*W. F.* The specimen or root received for examination bears a cluster of galls caused by an insect, Biorrhiza aptera. This insect punctures the roots and lays an egg in each hole. As the larvae develop the galls are formed.

Hollyhock-Leaf Rust.—*T. S.* The Hollyhock leaves are, as you suspect, attacked by rust, caused by the fungus Puccinia malvacearum. All diseased leaves should be collected and burnt and the plants sprayed with Bordeaux mixture. It has been found that if the fading leaves of diseased one year-old plants are collected, the plants are not attacked by the disease the second season.

Morello Cherry Trees Gumming.—*Miss E.* The gumming of your Morello Cherry trees is probably due to the soil in which they are growing being too heavy or too rich; if young, healthy Cherry trees make gross growth, gumming and canker generally follow. As your trees are young, lift them in October and add plenty of pounded chalk or old lime rubble, road scrapings and burnt garden refuse to the soil. If the drainage is efficient and you follow our advice you should not be troubled further with gumming.

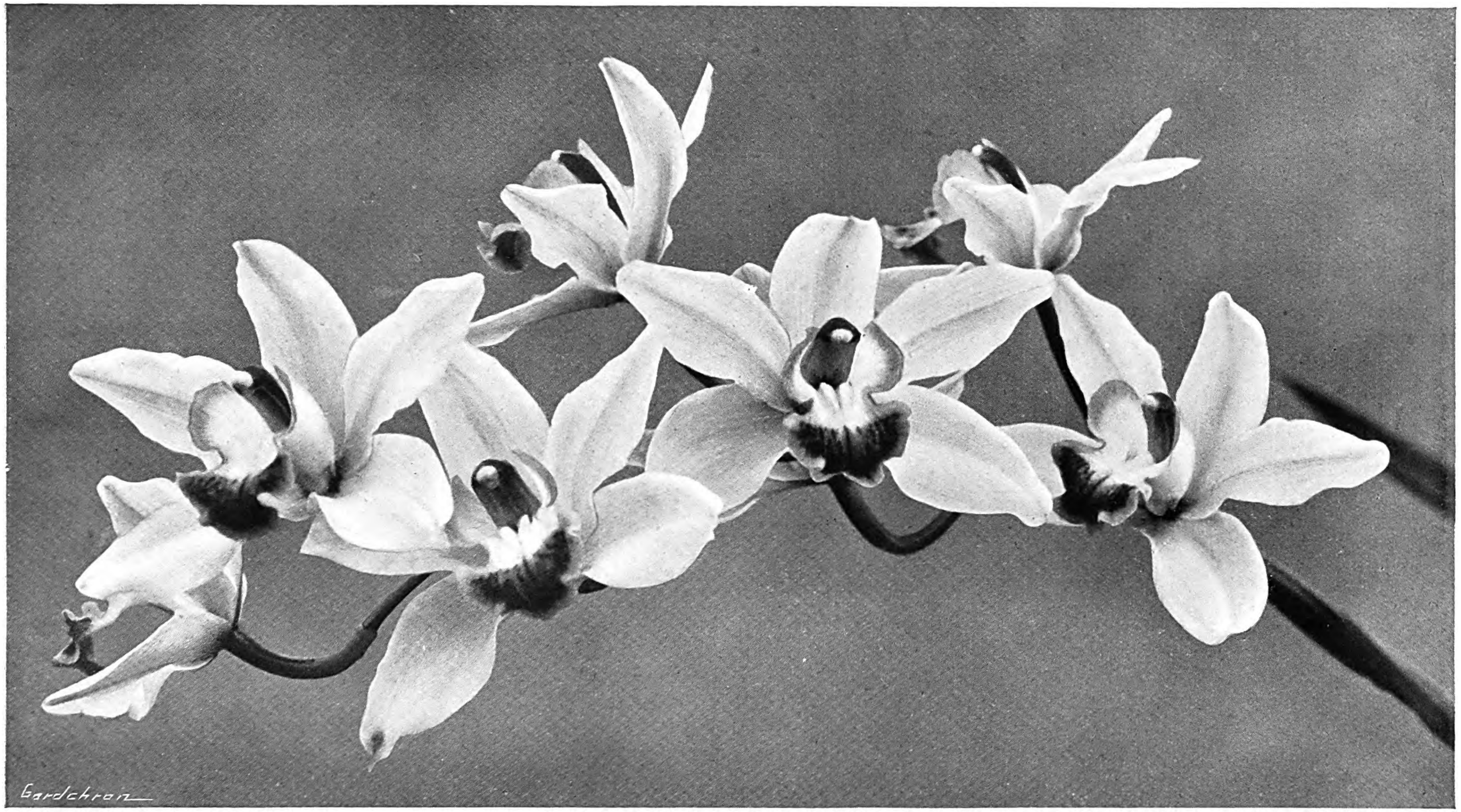
Names of Plants.—*F. P.* The Orchid appears to be a form of Cypripedium Druryi or an early hybrid from it; the other plant is Eucryphia pinnatifolia.—*W. E. A.* Probably Lilium chalcedonicum.—*J. C. G.* 1, Ornithogalum longibracteatum; 2, Sisymbrium officinale.—*A. T.* 1, Fagus sylvatica var. heterophylla; 2, Crataegus punctata; 3, Acer platanoides var; 4, Fagus sylvatica var. variegata; 5, Thuya dolabrata.

Potato Haulm Diseased.—*H. V. W.* The Potato haulm forwarded has been attacked by Potato Blight (Phytophthora infestans) which spreads rapidly in a wet season like the present. Nothing can be done now except to pull or cut off and burn the affected haulm, and to lift the Potatos so soon as practicable.

The Control of Slugs.—*G. P.* Nothing is more effective for the destruction of slugs than ordinary alum. It may be applied in saturated solution either to water the ground or spray the plants with, without risk of damage. For solutions, lump alum, which is cheaper, may be used instead of the powdered material and it should be dissolved in a suitable vessel by means of hot water; a saturated solution is approximately one pound of alum to one gallon of water. Alum may also be used in the powdered state for the protection of isolated plants in slug-infested ground.

Communications Received.—J. C.—H. N.—J. M. Wickendew.—J. C.—W. H. S.—J. T. B.—A. T. J.—C. B.—W. K.—P. D. W.—K. W.—W. F. S.—G. E. S.

Supplement to the GARDENERS' CHRONICLE. Sept. 10, 1927



CYMBIDIUM ROSANNA.

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Gardeners' Chronicle
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SUPPLEMENTARY PLATE.
Cymbidium Rosanna.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 57.5°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 7, 10 a.m. Bar. 30.1. Temp. 64°. Weather, Sunny.

American Gooseberry Mildew

THERE was a time, and that not so very long ago, when mycologists used to make our flesh creep with dreadful prognostications of the fate awaiting our Gooseberries if this pest were allowed to reign unchecked. These guardians of the health of plants regarded this fungus with so apprehensive an eye that they invoked successfully the penal might of the nation to hold in check its actual and potential ravages. The Destructive Insects and Pests Acts of 1907 came into being as the result of the apprehension of plant pathologists that, despite their skill in preventive plant medicine, the evil wrought by the mildew would prove beyond their powers of control. An interesting brochure might indeed be written on the influence of fungi on the laws of nations. It would cite the Barberry Laws of France and Massachusetts designed — unavailingly, of course — to prevent the spread of rust on cereals. It would devote a chapter to the influence of Potato Blight fungus on Sir Robert Peel's sudden conversion to free trade nearly one hundred years ago, and it would not omit references to American Gooseberry Mildew, which, with other disturbers of the peace of plants, has led many countries to adopt all sorts of measures, often as numerous as they are generally futile—to restrict the importation of noxious fungous and insect pests. This present delinquent, American Gooseberry Mildew, whose depredations have ceased to be serious in most parts of this country, is still apparently at its old tricks in Ireland; so much so, indeed, that the mycologists of the Ministry of Agriculture for Northern Ireland have been at much and successful pains to discover how it may be brought under control*. The Destructive Insects and Pests Acts, which were passed in 1927, give the Department of Agriculture power to deal with pests. The Department set about using its powers; Gooseberry bushes were burned by the hundred thousand — and the disease continued to spread. The principle that "the blood of the martyrs is the seed of the Church" would seem to apply even to fungi, for the more the Ministry of Agriculture persecuted the American Gooseberry Mildew the more it seemed to flourish. Those, however, who looked into the matter with eyes less feverish than those of the official bush burners, soon satisfied themselves that the milder method of good cultivation might do more to eradicate or, at least, check the disease than could be accomplished by the heroic method of burning all the victims of the disease at the official stake. Where bushes are grown as fillers between top fruit and allowed to grow unchecked beneath shade—there the disease makes greatest headway; but where the Gooseberry is well cultivated in open situations in fertile soil and the bushes are restricted by proper pruning, the disease does not flourish. At all events, little is heard now in this country of this once notorious pest. It may be that the climate of northern Ireland is more favourable to the spread of American Gooseberry Mildew than is that of our own. In any case, the prevalence of the disease in northern Ireland is apparently still so considerable as to warrant investigation of the best means of checking it. The fungus, Sphaerotheca Mors-uvae, responsible for the disease has, as is well-known, a summer and a winter stage, of which the former is the more vulnerable. Messrs. Muskett and Turner, therefore, devoted their attention to means of destroying the fungus in its summer stage. Experiments made in 1922 showed that the best results in controlling the disease were obtained by the use of ammonium polysulphide with soft soap—the fungicide which, if we remember aright, was advocated by Professor Salmon. Subsequent experiments proved that this fungicide (one part in 199 of water, with 4 lbs. of soft soap per 100 gallons) gave perfect control of the disease, so far as diseased bushes were concerned. Other fungicides, such as lime-sulphur, were also used, but it was found that, on the whole, two sprayings with the polysulphide specific, one immediately after flowering and the other three weeks later, gave the best results. With most varieties, Whinham's Industry, Crown Bob, Whitesmith and Red Warrington, the spray fluid does no injury to the leaves, but with Keepsake, leaf-drop sometimes occurs, and on bushes of Amber, polysulphide must not be used. For these varieties spraying with caustic soda is recommended. To obtain satisfactory results, however, three sprayings with soda are requisite, one in winter (February, 2 per cent. caustic soda) and two in summer (1 ounce of washing soda per gallon of water). If control of the larvae of Gooseberry Sawfly is also required, the authors recommend spraying twice in summer with a mixture made up of lime-sulphur (1 in 99), 2½ lbs. of lead arsenate paste, plus 5 lbs. of freshly hydrated lime per 100 gallons, or ammonium polysulphide 1 in 199, 2½ lbs. of lead arsenate paste, with 5 lbs. of freshly hydrated lime, per 199 gallons. Either of these mixtures may be used on the following varieties:—Whinham's Industry, Crown Bob, Keepsake, Whitesmith and Red Warrington. The cost of the spraying works out in northern Ireland at from four-and-a-half per cent. to six per cent. of the value of the crop.

Cymbidium Rosanna.—The Supplement Plate accompanying the present issue depicts a very beautiful Cymbidium raised at Westonbirt. The parents of this lovely hybrid are C. Kittiwake and C. Alexanderi, the latter giving it fine form and substance. In C. Rosanna the sepals and petals are a delightful shade of pink, while the labellum shows a combination of rose and rose-pink, with red markings on the broad apical portion. C. Rosanna was shown before the Royal Horticultural Society on March 8 of the present year, by Messrs. H. Alexander, Ltd., Westonbirt, Tetbury, and on that occasion the Orchid Committee granted it an Award of Merit.

The Arnold Arboretum.—Efforts are being made in the United States of America to raise an endowment fund of $1,000,000 for the Arnold Arboretum. The original endowment of £100,000 was enhanced during Professor Sargent's fifty-four years of service to $1,125,000. The Arboretum, however, has always had deficiencies to meet and these have, at times, amounted to nearly $50,000. Although in the past such deficiencies have been made up by the late Professor Sargent personally and his friends, it is now considered necessary to raise a memorial fund to maintain and develop the Arboretum on the lines conceived by its creator and first director.

Rosslyn Orchids.—We remind our Orchid-loving readers that the sale of the late Mr. H. T. Pitt's Rosslyn collection of Orchids will commence on September 12, at Rosslyn, Stamford Hill, and be continued on September 13 and 14, and again on September 20, 21 and 22.

Queen Alexandra Memorial Fund and British Gardens.—We learn that the admirable sum of £6,765 has been added to the Queen Alexandra Memorial Fund as a result of payments made by those who visited the many British gardens thrown open for this purpose. In most cases the charge for admission was one shilling. A few of the larger amounts received from well-known gardens include Leonardslea, £124; Goodwood, £67; Arundel Castle, £108; Welbeck Abbey, £237; Eaton Hall, £166; and Chatsworth, £194. It is probable that the total mentioned will be increased considerably, as several other gardens will be open during the present month. It is a pleasure to record that, although nearly seven hundred gardens were opened to the public on behalf of the Queen Alexandra Memorial Fund, "not a single complaint of litter or inconsiderate behaviour has been received."

Newtownards Flower Show.—We believe that nowhere in the British Isles, except at Newtownards, Co. Down, is a great flower show held in the grounds of a nurseryman. Long ago, in 1854, the Newtownards Show was held on very much the same site as the one held ten days ago in Messrs. Alex. Dickson and Sons' grounds. This year the show was larger than ever, and it was attended by crowds of visitors from Belfast and other towns and villages in the district. Roses and Sweet Peas were particularly good features, and the principal prizes for these and other flowers were pieces of plate, paintings and other useful and valuable items. Plants, Dahlias, annuals and table decorations were other capital sections, while vegetables, farm crops, honey and dairy produce occupied considerable space. The horse-leaping competitions held during the afternoon proved a great attraction. Mary Lady Clanmorris, Sir Samuel Kelly, Col. R. G. Sharman-Crawford, Sir Trevor Henderson, Capt. S. B. Duffin and Mr. David McAlpine were among the most successful prize-winners. Mr. Alex. Dickson (the President), his brothers and his sons all take an active interest in this big local event, and Mr. David Orr is the capable Secretary. The nurseries were thrown open to the general public, and most of the visitors thoroughly enjoyed the opportunity of inspecting the vast acreage of Roses, the big houses of Carnations and Sweet Peas, the shrubs, fruit trees, Begonias and Dahlias in the Newtownards establishment.

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* The Control of American Gooseberry Mildew in Northern Ireland. By A. E. Muskett, B.Sc., and E. Turner, A.R.C.Sc.I. *Journal* of the Ministry of Agriculture for Northern Ireland. Vol. I., 1927. Published by H.M. Stationery Office, 1927. Price 2/6.

Park Superintendents' Outing.—The members of the London and District Branch of the National Association of Park Superintendents will visit the Royal Horticultural Society's Gardens, Wisley, on Friday, the 16th inst. The party will travel by charabanc, which will leave the Elephant and Castle Hotel at 1 p.m. Tea will be provided at the Hut Hotel, Wisley. Full particulars of the outing may be obtained from Mr. W. H. Johns, Parks Department, St. James' Churchyard, Bermondsey.

The Unseasonable Summer. — Whilst the summer of 1927 will be regarded as one of unusual rainfall, it is not by any means the wettest summer on record. The total rainfall for June, July and August was 11.024 inches, as compared with an average of 7.566 inches, the excess being nearly fifty per cent. over the average. In the summer of 1879, however, the rainfall for the same period was 16.352 inches, when so much as 6.557 inches fell in August, compared with the August rainfall this year of 4.348 inches, which may surprise some to know is 1.690 inch below the average. These facts are given by Mr. W. D. Christmas, of the Records Department, Rothamsted, in the *Times* of Friday, September 2, who states that the rainy season started in the middle of June and spread over ten weeks, and that fifty-three of these seventy days were wet, and at no time were there more than three succeeding days without rain.

A Tree-felling Contest.—A tree-felling competition, open to the western counties, was held on August 30, by the Royal English Arboricultural Society, at Langridge Woods, East Quantoxhead, Somerset. Century-old English Oaks, standing about sixty to eighty feet high, were selected for felling by the competitors, who worked in pairs, representing the counties of Somerset, Devon and Wiltshire. The first prize was won by two brothers, Messrs. F. J. and D. F. Tucker, of Dartington, Devon, aged seventeen and twenty respectively. Mr. Gerald W. E. Loder is President of the Society, and in the morning of the competition he planted a Douglas Fir to commemorate a visit of the Society to the Forestry Commission's plantation on the Quantox estate.

New Park in Germany.—The State of Anhalt in Germany, has lately taken over for the use of the public several parks hitherto in private hands, notably the castle and park of Luisium, the castle and park of Oranienbaum, and the castle of Wörlitz with the parklands formerly belonging to its ducal owner. The palace garden at Dessau has also been made over to the State authorities. These large, new open spaces will be under the control of Herr Hallervorden, who has already taken up residence at Wörlitz. As he had already the supervision of several public gardens in Anhalt, he will have his hands full for some time to come.

International Horticultural Congress in Vienna 1927.—The following programme of excursions has been arranged for those members of the International Horticultural Congress who wish to see some of the principal places of interest in and around Vienna:—Monday, September 19: Meeting at the Kursalon at 7 p.m. Tuesday September 20: Lunch at Rathauskeller; excursion to Schönbrunn and return and reception. Wednesday, September 21: Lunch at Rathauskeller; excursion to Rothschildgarten Turkenschanzpark, Hochschule fur Bodenkultur, and reception. Thursday, September 22: Lunch at Rathauskeller; excursions by motor car (1) visit to Vienna gardens; (2) Strebersdorf, Kagran, visit to nurseries; (3) visit to the new tenement houses of the municipality of Vienna (only one tour is possible for each member of the conference). Friday, September 23: Excursion to Baden, near Vienna; lunch at Baden. Saturday, September 24: Lunch at Rathauskeller; visit to Chapter House at Klosterneuburg. Sunday, September 25: Drive to Hochschmeeberg; lunch at Hochschneeberg.

Mr. Arthur Allardice.—Mr. Allardice began his gardening career in 1898 under his late father, who was gardener to the Earl of Strathmore, Streatham Castle, Darlington, where both indoor and outdoor flowers were grown in very large quantities. After completing his three years' apprenticeship, Mr. A. Allardice served for three years as journeyman under Mr. Tallett at Raby Castle, where he gained a large and varied experience with stove and greenhouse plants and indoor fruits, including Pineapples, while floral decorations indoors were a fine feature at Raby Castle in those days. Leaving Raby Castle, he served with Messrs. Mack and Miln in their landscape department, and then became journeyman in the fruit houses under the late Mr. Gribble, Wynyard Park, Stockton-on-Tees, where he stayed three years. His next post was that of foreman under Mr. Flack, Cholmondeley Castle, and two years later he became general foreman under the late Mr. Brock at Goodwood. Here he remained five years, and when war broke out, being keen to join up with the Gordon Highlanders, His Grace the Duke of Richmond, hearing of this, arranged for him to join the 8th Battalion, in 1914. He proceeded to France on May 10, 1915, with the 9th Division, and saw plenty of fighting and was, indeed, dangerously wounded in November, 1915, at Hill 60. After a period in hospital in England, he reported to headquarters in Aberdeen, and, after volunteering three times to join his old Battalion at the front, he was sent out to Arras, in April, 1917, where he was again wounded, and, being unfit for further active service, he was discharged in May, 1918, and returned to Goodwood. Shortly after his return, the Duke of Richmond recommended him as gardener to the Rt. Hon. Viscount Boyne, Brancepeth Castle, Durham. In the following year the place was closed, but his employer wished him to go to Burwarton, Shropshire, of which gardens he took charge on August 7, 1919, and during the past eight years Mr. Allardice has made many improvements in the pleasure grounds, kitchen gardens and the fruit range. For the past two years Mr. Allardice has judged at the great Shrewsbury Floral Fete and he is now a member of the Committee of the Shropshire Horticultural Society. Romance enters every life, therefore it is interesting to record that Mr. Allardice married the hospital sister who nursed him through his dangerous illness in 1917.

MR. ARTHUR ALLARDICE.

Manchester Parks' Staff Outing.—The annual outing of the Manchester Parks and Cemeteries Staff Society was held this year in London, when 145 of the members and friends inspected the principal parks and open spaces of the metropolis, including Hampstead, Kenwood, Regents Park, Hyde Park, St James' Park, Battersea Park, the large open spaces at Wimbledon and Putney, Hampton Court and Richmond Park. The party also saw many of the chief features in the City, and finished up at Kew Gardens, where they were received by Dr. Hill, the Director, and conducted around the gardens by Mr. J. Coutts and Mr. A. Osborn, Assistant Curators. The visit was the outcome of an invitation extended to the Society by Mr. Parker, F.S.I., Deputy Chief Officer of the L.C.C. Parks on the occasion of a special lecture given during the winter session, and to him the Society is indebted for the very interesting and enjoyable programme worked out in connection with the Hon. Secretary, Mr. L. E. Morgan, N.D.Hort. Mr. Parker accompanied the party throughout the tour.

The London Allotments Show.—An "All London" show of allotment gardens produce has now become an annual fixture, and the sixth of the series, which was held at the R.H.S. Hall, Westminster, on September 2 and 3 last, was in every respect worthy of its predecessors. A few short weeks after last year's show the London Allotments and Gardens Show Society suffered a grievous loss in the death of Mr. J. V. Davis, who had been Secretary for the previous three years. In a quiet but determined way, Mr. Davis had done an immense amount of work for the allotment holders, and the Society has been fortunate in securing such a good successor in Mr. H. A. Treganowan. A wide interpretation is placed on "The London Area," and allotment holders so far from the City as Watford, Lewisham and Southgate compete with those in more urban districts. At this year's show flowers were more largely exhibited than before, and it was interesting to note that the most successful exhibitor came from West Ham. Roses, Dahlias, Gladiolus, Chrysanthemums and general border flowers were most creditably staged, while Sweet Peas were so numerous as to require a special place for their display. This galaxy of Sweet Peas was, no doubt, due to the offer of a medal from the National Sweet Pea Society for the best exhibit, and this was won by Mr. Charles Woodhouse, West Ham, with blooms of outstanding quality. Competition was also very keen in the Society Classes for collections of vegetables. The champion exhibit was staged by the Edmonton Allotment Society, and this included exceedingly good Cauliflowers, Cabbages, Peas, Runner Beans and Potatos, but the very best exhibit in the show was the first prize collection of six kinds of vegetables grown in a school garden. This class was open to the whole of Great Britain, and the premier collection was shown, for the fourth successive time, by the pupils of the Leybourne Holme School. This exhibit was of splendid quality, the Carrots and Onions being superior to any others in the whole of the show. The Beckenham and District Society produced the best collection of six varieties of Potatos, and Mr. W. E. Wilson, of Watford, had the best individual collection of vegetables. The varieties of Potatos most in favour with the exhibitors were Catriona, Arran Comrade, Arran Chief and The Bishop. Runner Beans, Peas, Celery, Shallots, Beet and Parsnips were particularly well grown, but Cabbages were not equal to those of previous shows. One of the outstanding exhibits of the show was the collection of Apples and Pears set up by Mr. E. Anstee, of the Paddington Postal Horticultural

Society. He had fine fruits of Williams's Bon Chrêtien Pear, Peasgood's Nonsuch, Emperor Alexander, Worcester Pearmain and Ribston Pippin Apples.

London Gardens Exhibition.—A visit to a horticultural exhibition on Monday last in the Temple Gardens brought back memories of the old days when the spring shows of the Royal Horticultural Society were held there, before they were transferred to Chelsea Hospital Gardens. The exhibition under notice was organised by the *Daily Express* in co-operation with the London Gardens Guild in order to stimulate an interest in gardening in the London area. The numerous exhibits were arranged in long, canvas-covered shelters—like the stalls of a bazaar—with the front open to inspection of visitors, who were so numerous as to make note-taking a matter of difficulty. The show was held on Saturday, Sunday and Monday last, and on the Sunday it was visited by more than 10,000 people. In addition to the competitive exhibits, many well-known nursery firms set up non-competitive groups, so that the exhibition was a thoroughly representative one. It will be remembered that the *Daily Express* offered prizes for the best gardens in the metropolitan area and a replica of the first prize garden was laid out by Messrs. James Carter and Co. There was also a competition for exhibits from the prize winning gardens in which Mr. C. H. Dyke, of Thornton Heath, excelled, his collection including flowers, fruits and vegetables, and indoor as well as out-door flowering plants. There was also a competition for those entrants in the garden competition who did not win prizes. There was a special class for corporate displays from local gardening societies, in which the Camberwell Gardens Guild excelled. Another interesting class was for the London Post Office Horticultural Societies, in which the Mount Pleasant General Post Office showed the premier exhibit. There was keen competition in the class for exhibits from Municipal authorities in the London district, and here the Bermondsey Borough Council was easily first for a display which contained fine Dahlias, Delphiniums, Petunias, Carnations, Lilies and other flowers. Some very good Roses were shown in the Rose classes, and Dahlias also were of excellent quality. Judging from the numerous exhibits of garden flowers, it was obvious that Scabious, Erigerons, Pentstemons, Pansies, Coreopsis, Phloxes, Gaillardias, Sunflowers, Golden Rod, Antirrhinums, Begonias, Delphiniums and Kniphofias are amongst the most successful subjects that can be cultivated in the metropolitan area, for these were shown very extensively and well. We congratulate both the *Daily Express* and the London Gardens Guild on the success of their efforts in stimulating a love of flowers amongst Londoners, and in their efforts towards making London a city of flower gardens.

Legacies by the late Mr. Geo. F. Moore.—The late Mr. Geo. Frederick Moore, of Chardwar, Bourton-on-the-Water, Gloucestershire, whose collection of Cypripediums was one of the finest in the country, bequeathed several legacies from an estate amounting to £230,936. He bequeathed £2,000 to the Bourton-on-the-Water Cottage Hospital, and another £1,000 to the Hospital from bequests left to his sisters and brothers, on the death of the survivor; £1,000 to the local Church Council; £1,000 to the Parish Council and Churchwardens, on trust, to apply the income in gifts of coal to the poor; and £500 to the Parish Council, upon trust, to apply the income for improvements in the parish, such as the upkeep and replacement of the trees planted by him. He directed that six months' wages should be paid to each of his outdoor men servants, and, among other bequests, gave an annuity of £20 each to three indoor servants, with the proviso that when they become unfit for work the annuity of two should be raised to £50 per annum and a cottage provided for their occupation, and he requested his sister to make provision for the other. We understand that during his life-time Mr. Moore made ample provision for his gardener, Mr. W. Page.

Charles Darwin's House at Downe.—Following the announcement by Sir Arthur Keith in his presidential address before the members of the British Association at Leeds, that the Council of the British Association was considering the purchase of Charles Darwin's house at Farnborough, Kent, Dr. George Buxton Brown, F.R.C.S., has offered to make himself wholly responsible for the purchase. His motive is to allow future generations to see Darwin's home which, with its estate, might otherwise have passed into the hands of the builders. The cost, including the endowment fund, will amount to about £15,000, and Dr. Brown has made the condition that no other contributor is to be asked to share the cost with him. In recent years Downe House has been used as a school. It stands on about eighteen acres of land; the original square, brick building of three stories was extended by Darwin, who built a large bow extending up through the three stories, and also added a drawing room with a verandah opening into the garden, and a study.

Appointments for the Ensuing Week.—MONDAY, SEPTEMBER 12: National Chrysanthemum Society's Floral Committee meeting; British Mycological Society's autumn Foray and Annual Meeting at Aviemore (six days); Harrogate and District Horticultural Association's meeting; United Horticultural Benefit and Provident Society's meeting; Guildford and District Gardeners' Association's meeting. TUESDAY, SEPTEMBER 13: Royal Horticultural Society's Committees meet (Vegetable show); Jersey Gardeners' Society's meeting. WEDNESDAY, SEPTEMBER 14: National Dahlia Society's show: North of England Horticultural Society's show (three days); Royal Caledonian Horticultural Society's show (two days); Guildford and District Rose Society's show; Sheffield Chrysanthemum Society's meeting. FRIDAY, SEPTEMBER 16: Manchester and North of England Orchid Society's meeting.

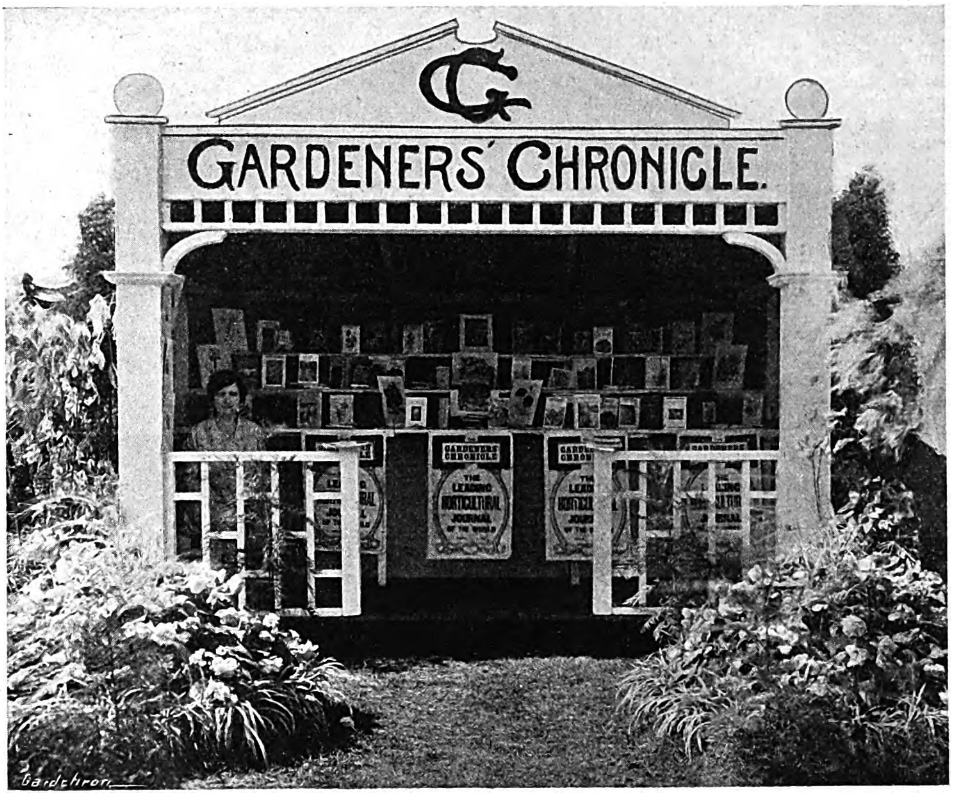


FIG. 93.—THE "GARDENERS' CHRONICLE" KIOSK AT SOUTHPORT SHOW.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Green Dahlias.*—We have before us a singular example of that possibility of fixing a sport, to which allusion has been so often made. Mr. Salter, of the Versailles Nursery, Hammersmith, observed last year among his seedling Dahlias one which produced a number of green, scaly, flower heads, but no perfect flowers. The root was propagated this season and every plant is now covered with similar heads of scales, looking more like an Artichoke than a Dahlia. All the plants are vigorous, but there is not a single perfect flower-head upon any one of them, so that the sport seems to have become already fixed. One of the specimens is now before us. The bracts or scales of the involucre, and the paleae of the receptacle, instead of retaining their usual membranous state, have all taken on them the texture, colour, and veins of leaves, even narrowing their bases into foot-stalks. Not only is there no trace of flowers in the axils of their scales, but even rudimentary buds are deficient. The receptacle is elevated into a slender axis, and the end or centre of it is in no one respect different from the central scales of an ordinary leaf bud. In one of the examples the clustered arrangement of the involucral leaves is entirely gone, and its place is taken by a mere branch six inches long, covered over with small leaves, of which the uppermost are packed more closely and are smaller than the lower, whose stalks are full half-an-inch long, and are inserted in a tolerably regular spiral manner. This monster must be taken to demonstrate, firstly, that the bracts and paleae of a Dahlia, and therefore of all composite flowers, are leaves imperfectly developed, or, if the reader pleases, stopped in their growth when young; secondly, that the receptacle of such plants, the "bottom" of the Artichoke, for example, is merely a branch taking a horizontal development, instead of growing longitudinally; and, thirdly, that no difficulty exists in perpetuating sports artificially. Mr. Salter and others should cultivate this strange production assiduously; it is by no means improbable that it may again sport or be made to do so, changing the green of its scales for some bright colour; and, if so, a very pretty looking garden plant would be the result. *Gard. Chron., September* 11, 1852.

Publications Received.—*Fertilisers and Soil Improvers*, by W. Gardner; Crosby Lockwood and Son, Stationers' Hall Court, Ludgate Hill, E.C.; price 7/6 net.—*Die Praxis der Angewandten Dendrologie in Park und Garten*, by G. Kuphaldt; Paul Parey, Hedemannstrasse, 10 u. 11, Berlin; price, Rm. 23.—*The Life and Work of an English Landscape Architect* an Autobiography by Thomas H. Mawson; The Richard Press, Ltd., 90, Newman Street, W.1; price 25/–.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Resting Dendrobiums.—In order to retain a vigorous and healthy constitution in the plants, rest is necessary, and everything appertaining to the drying and resting stages must be gradual, as not only the successful flowering but the ultimate health of the plant depends upon its thorough ripening and consolidation. It is generally easy to select positions for Dendrobiums where they may gradually pass from moderate shade to clear sunshine, taking care to choose a position where they are free from draughts and cold winds. When fully exposed to bright sunshine, the compost, being full of roots, will dry out quickly, therefore careful judgment is necessary in the application of water, as there is more skill in resting these plants satisfactorily than in cultivating them through their growing season. Plants well established in small receptacles will need water more often than larger specimens; but in either case, when once a thorough watering has been given, they should receive no more moisture until the whole compost has become dry again. The aim of the grower should be to give sufficient water to keep the roots in a healthy condition, to prevent undue shrivelling of the pseudo-bulbs, and to prevent new growth by the admission of fresh air, sunshine and cool conditions. The plants should be cleansed thoroughly, the new pseudo-bulbs neatly tied either to stakes or wires, and those of a pendent growth allowed to assume their natural habit. Aerial growths are best removed, and, if it is desired to increase the stock, may be put singly in small pots and placed in growing quarters, where they will soon become established. Cuttings that were inserted in sand earlier in the season, which have developed roots from the new growths, may be potted in the same manner as the aerial growths.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Red Cabbage.—If early heads of red Cabbage are desired the seeds should be sown now, and when they are large enough the seedlings should be planted in their final positions, or pricked out in a nursery bed and planted out in early spring. The soil between the plants should be kept stirred with the hoe.

Spring Cabbage.—Where plants of the earliest sowing are strong enough, they should be planted in their final positions, which should be somewhat sheltered. Small-growing varieties may be planted in rows fifteen inches apart, and about twelve inches asunder in the rows. Keep them dusted with a little old soot and stir the soil with the hoe on frequent occasions. When the plants are growing freely draw a little soil to the stems.

Brassicas.—Keep these plants free from weeds and yellow leaves, and use the Dutch hoe between the rows on frequent occasions. Mould up the stems before the plants get too large. Keep the curds of Cauliflowers well covered with their own leaves.

Celery and Leeks.—Constant attention should be given to these vegetables during the coming months, and more soil and paper added to the stems as required.

Runner and Dwarf Beans.—These useful legumes are cropping freely, and the pods should be picked so soon as they are ready or the plants will quickly fail to furnish a good supply. Feed the roots with liquid manure about once a week, and thin the foliage if it becomes at all crowded.

Asparagus.—See that the stems of Asparagus are supported either by strands of string or by strong twigs thrust around the plants. If the plants are at all weak, or if the weather is dry, give the beds a thorough soaking with liquid manure.

Cardoons.—See that a little more soil is added to these plants about every ten days; if hay-bands, straw or paper are used for the present, more of these should be added. Care should be taken that the soil does not get into the hearts of the plants, or rotting will occur and cause irreparable damage.

Potatos.—In view of the wet season, Potatos should be dug so soon as they are ready. I advise early lifting at all times, and it is more than necessary this season in view of the danger from late blight. Where possible, spray the crop again as advised in an earlier calendar.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Lilium candidum.—Where it is intended to grow this Lily in pots, bulbs for the purpose are now obtainable. They should be potted directly they are received, for they will suffer somewhat if they are kept out of the ground for any considerable length of time. A suitable compost for this Lily is made of good open loam mixed with coarse sand and old mortar rubble to render the mixture porous. When potting, it should be borne in mind that this Lily is not stem-rooting, therefore it is not necessary to allow room in the pots for top-dressings. Stand the receptacles in a cold frame where the lights may be put on to ward off heavy rains, but make no attempt to force this plant into flower; it should be grown under the coolest conditions, otherwise it may be a complete failure.

Cinerarias.—Plants of the earliest batch of Cinerarias will now be growing freely in the receptacles in which they are to flower, while those that are to form a succession are ready to be transferred to small pots. These plants are best grown in cold frames with a layer of coal ash on the soil, and they should be exposed to the air until frost threatens, when the frames should be protected with mats or other suitable materials. Greenfly and the leaf-mining maggot are often troublesome to Cinerarias; these pests may be easily kept in check by spraying the plants occasionally with nicotine emulsion.

Salvia splendens.—This useful decorative plant is often planted out in borders during its growing season, and where this method of cultivation has been practised the plants should now be lifted and potted. Keep the roots well supplied with water, stand the plants in a shady spot and spray them on frequent occasions until they have become established again. Where the plants have been kept well pinched to ensure bushy specimens, stopping should be discontinued. When it is noticed that the plants are well established in the new soil they should be given copious supplies of liquid manure. Plants that have been grown in pots during the summer should also be fed liberally.

Chrysanthemums.—Early-flowering Chrysanthemums are, in most cases, planted out in borders, and where they have been grown under these conditions a few of the more forward plants should be lifted and placed in suitable sized pots for decorative purposes. They will be found very useful for decorating the conservatory and dwelling house. Lift the plants carefully with plenty of roots, in dull weather. The plants should then be stood in a shady corner for a few days and the roots kept well supplied with water. Occasional sprayings with rain-water overhead will help the plants considerably to recover from their disturbance. Other plants may be lifted and planted out in deep frames where protection may be given to the flowers from heavy rains. Choicer flowers for cutting will be obtained if the trusses are disbudded. Chrysanthemums that are being grown in pots to produce large blooms, also single and decorative varieties, will require regular attention with regard to tying in all loose growths. Should green-fly or the leaf-mining maggot be in evidence, spray the plants with nicotine emulsion or Abol insecticide. Now that the receptacles are filled with roots plenty of water is necessary, also liquid stimulants. The grower should be guided in these matters by the state of the weather and the plants under cultivation. Before liquid manure is applied see that the soil is in a fairly moist condition.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Preparations for Planting.—Although too early to plant fruit trees, the present is a suitable time in which to take notes of the different kinds best suited to particular purposes. A visit to a good fruit nursery at this season of the year is always interesting, when young trees of both new and old varieties may be seen growing in quantity and their merits compared. Intending planters on a large scale should not overlook the fact that orders are, as a rule, executed in rotation, therefore to avoid delay as much as possible, it is necessary to send the order early. If it is intended to plant many trees, timely preparations should be made, so that the planting may be done so soon as the trees arrive. In selecting ground for a new fruit plantation, choose land which slopes towards the north and, if possible, well sheltered from the north and east. The soil should be drained thoroughly and well tilled to a good depth, especially if the ground is on the flat and of a close, retentive texture. To make a selection from the large numbers of both Apple and Pears is bewildering to many. It is not advisable to plant too many sorts for the sake of variety, but only good quality, heavy cropping varieties, the fruits of which will furnish a succession over a long period; good late fruits are always in demand.

Morello Cherries.—The weather has been very unfavourable to these fruits which should be gathered in fine weather, before they are past their best. Morello Cherries, when bottled, are much appreciated in the winter, when fruits are scarce. The preserving of Morello Cherries and other fruits in bottles is not carried out so extensively as it should be when the fruits are very plentiful. So soon as the trees have been cleared of their crops, remove the nets that have been used as a protection against birds, and thoroughly wash the leaves and wood with an insecticide. Insecticides at a moderate strength should be applied a few times in succession in preference to giving one or two heavy applications. Petroleum emulsion, when used rightly, will do much to cleanse the foliage, making the leaves clean and bright.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Early Vines.—Any root-pruning, root-lifting or additions intended to be done in early vineries should be attended to whenever the weather is favourable. Not one of these operations can be completed without the aid of good compost, which should be prepared in quantity equal to the probable demand. Ordinary soil at this season is by no means cold, but with the addition of a fair percentage of bone-meal the whole mass is soon warmed by the fermentation of the fertiliser. Root lifting should be done when the compost has become exhausted of its fertilising properties. Commence at the front of the border, working out the old compost with a steel fork, taking care not to injure any of the roots, as vines already weak are in need of every portion of old root worth retaining. The roots should be tied together carefully until the drainage is made efficient and ready for the reception of the new compost. New turves, grass side downwards, form a good base on which to place the soil. The latter should be made firm by treading, and high enough to accommodate the roots in the lowest part of the undisturbed border. The roots should be spread out, examined and relieved of all faulty or injured parts with a sharp knife. A little soil should be placed over them and made firm, another layer of roots should follow, and so on, until planting is completed. The vines during this process should be kept fairly close, moist, and in some cases shaded, but when only one-third or one-half of the border is removed, vines having an abundance of roots in the undisturbed part seldom show signs of having been interfered with. Outside or inside borders may have a little fresh compost added from year to year as the roots require it, and the best time to apply it is immediately after the crop is cut and the main leaves show signs of ripening. A portion of the border along the front should be forked down, when the strongest roots may be shortened, and those descending into the drainage brought nearer to the surface. As vines always do best before the roots reach the extremity of the space allotted to them, eighteen to twenty-four inches of fresh border at a time is ample. The old part of the border being solid and firm, care is necessary to see that the new soil is in close juxtaposition to the old, otherwise the young roots will be strained, and watering will increase any cavity that may appear instead of penetrating evenly through the border.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Amaryllis Belladona.—At the time of writing, this bulbous plant is commencing to flower. Apart from its decorative value as a flowering plant, the blooms are ideal for use as cut flowers. The most suitable place in which to grow this Amaryllis is in a warm, well-drained border at the foot of a south wall; if it is the wall of a plant house, with water pipes inside, so much the better. The dry bulbs are usually received from the bulb merchant about this time, and they should be planted without delay in a well-drained, carefully prepared border, for if they do well they may remain undisturbed for many years. The tops of the bulbs should not be covered with more than three inches of soil; this is, I realise, quite contrary to the usual advice, which is to plant them at least eight inches deep. If, however, they are planted too deeply they usually fail to flower freely, the bulbs apparently not ripening properly. There are numbers of varieties, but they do not differ much, with the exception of an early flowering form, wrongly called blanda, and the fine, late flowering variety known as rubra major. There is also a fine variety known as the Kew Belladonna,

Nerine Bowdenii. — This beautiful species should be much more generally planted out-of-doors, for it succeeds perfectly under the same conditions as the Amaryllis, and, except in very favoured situations, is the only Nerine that succeeds out-of-doors. It should be treated in every respect like the Amaryllis; shallow planting is essential for this plant. This species is more or less evergreen, and ideal for supplying cut blooms. If frost should appear before the plant has finished flowering, it is an easy matter to afford it some slight protection.

Watsonias.—These South African plants have been very much neglected, and yet most of them succeed under the same conditions as the Amaryllis and Nerine. In the south, at least, the best known Watsonia, viz., W. Meriana var. alba, generally known as W. Ardernei, succeeds perfectly in the open, and is in flower at the time of writing, August 27. A large bed interplanted with a good variety of Lobelia fulgens is very beautiful. Dry corms of this Watsonia may usually be obtained early in the year; when such is the case they should be planted directly in their flowering quarters, in the same way as Gladioli. If, however, corms are received during the autumn, it is wise to plant them at once, as their growing season is during our winter. They are hardier than is generally believed, and should be more generally planted.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Sweet Peas.—These beautiful annuals have done extremely well this year in spite of the somewhat unfavourable summer. In order to prolong their season of usefulness, all spent flowers and seed-pods should be removed; if the plants have reached their maximum height and are still growing freely, the side-shoots should be regulated by removing alternate ones and securing the remainder so that they are kept growing erectly in order to produce straight-stemmed flowers. Where a supply of Sweet Peas is desired early next season, either under glass or out-of-doors, seeds may be sown now in pots, and the seedlings kept in a cool house during the winter. The seeds should be shaded from bright sunshine until they have germinated, but afterwards the plants should be exposed to light and air to keep them sturdy; only in times of frost is fire-heat necessary. By sowing five seeds in a four-inch pot and transferring the seedlings to larger sizes when required in the early spring, fine specimens may be grown for making a greenhouse gay early next year, or if they are shifted once into six-inch pots they will make splendid plants for setting out in April.

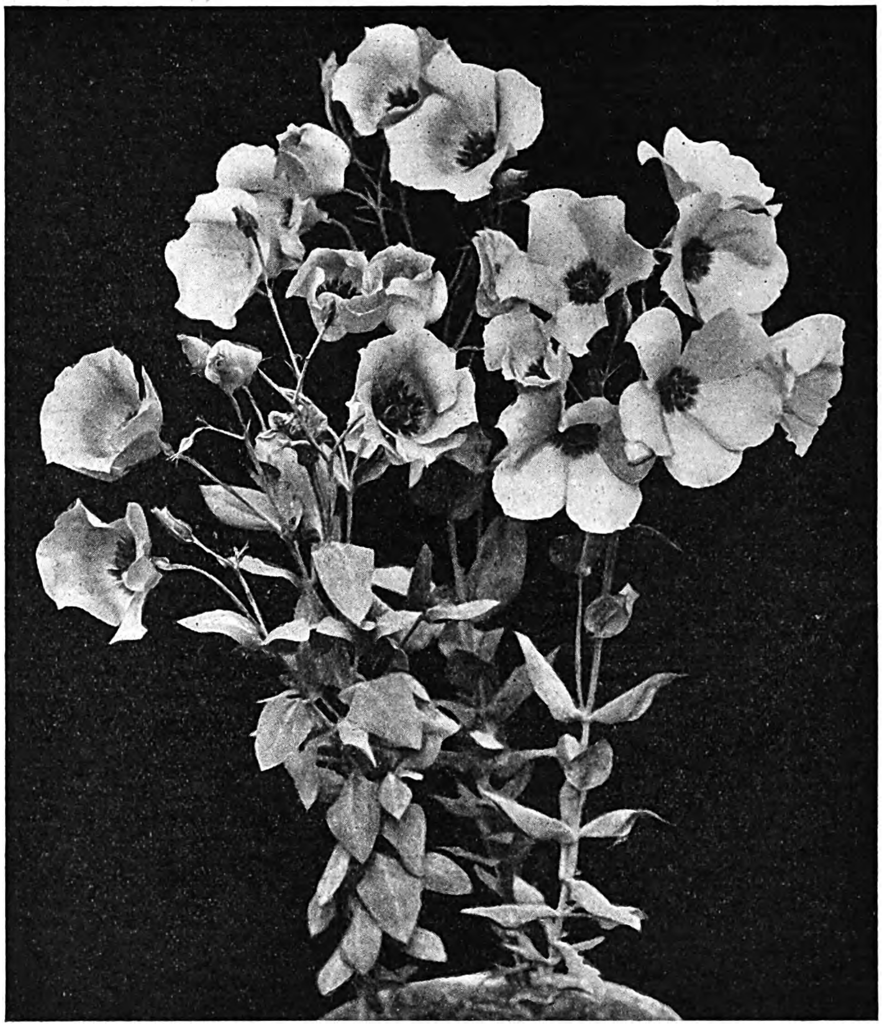


FIG. 94.—EUSTOMA RUSSELLIANUM.

(see p. 206).

Richardia africana.—Arum Lilies are grown in many gardens under almost cool conditions, with the result that they are usually very late in ripening their foliage, but so soon as this has taken place, the plants should be examined and repotted if necessary. Fine specimens may be grown in ten-inch pots, and when they become exhausted, the clumps may be broken up and made into a smaller batch, which will be useful for many purposes. Ample drainage is essential and this must be renewed whether the plants are to be repotted or simply top-dressed, as copious supplies of water and liquid manure are necessary to these plants in their growing season. Disease is prevalent in Arums in some places. At the first sign of disease the plants should be sprayed with potassium sulphide (liver of sulphur) at the rate of one ounce to one gallon of water and again occasionally after the disease has been controlled. Arums are hardier than is usually supposed, and although their foliage may droop for a few hours after a frosty night they soon recover, and, so far as I have observed, flower with greater freedom if grown without fire-heat. A number placed in about two feet of water have flowered extremely well out-of-doors here this summer and will be wintered in that position to prove their hardiness.

Potatos.—Second-early Potatos should now be lifted and stored, as the foliage is quite ripe, at least in early districts. Where home-saved sets are to be used next spring the same care should be taken in securing them as was advised for the earlier sorts. It is not sufficient to dig the whole plot and then pick up any tubers of seed size; only sets of seed size from well-cropped plants should be retained. The seed tubers should be stored in trays, in a well-lighted shed, where they may be looked over occasionally on wet days. The ware tubers should be stored in dark sheds or cellars and kept covered by straw so that no light may reach them. Where Potato disease is prevalent, the tubers will require to be looked over from time to time, removing any showing the well-known discoloration which indicates the presence of disease.

ALPINE GARDEN.

SPIRAEA DECUMBENS.

One of the dwarfest of the woody Spiraeas, S. decumbens, is a very attractive little shrub, and one that might be more often seen in our rock gardens. A native of the Tyrolean Alps, it is perfectly hardy and easy, delighting in a rocky root-run with full exposure, and it is by no means averse to wall culture. This is a deciduous species, making a little thicket of thin wiry branches some eight inches in height, which are amply furnished in summer with oval, toothed leaves of a pale bluish-green. These growths terminate in flat heads of white flowers of which a succession is maintained almost throughout the season.

There are several cultivated forms of Spiraea decumbens (procumbens), one of which is S. Hacquetii (S. d. var. tomentosa). This has rather narrower leaves which, with the younger wood, are more downy than those of the type. In any of its varieties S. decumbens is a delightful shrub, and though it is inclined to "run," it does so very slowly, and has never, in my experience, become a nuisance.

SPIRAEA CAESPITOSA.

This is a pleasant little plant for a really well-drained, sunny ledge in the rock garden. It is an American species and makes a low, neat mat of grey-green, undivided leaves. Throughout the later summer it puts up a number of three-inch flower-stems each terminating in a spike of fluffy, pinky-white blossoms. S. caespitosa is quite hardy with me, and it does very well in a dry moraine of ordinary scree mixture. Being a later bloomer, it is especially welcome, and, not being a showy plant, it has the advantage at this season of having the field to itself—comparatively, at any rate.

NERTERA DEPRESSA.

For some years this New Zealand plant did not succeed very satisfactorily in the open with partial shade from a rock, and with the shelter of a bush it did not seem much happier. An opportunity then occurred of providing it with a large cavity beneath a shelving boulder, this facing north and the ground below being rather cool. N. depressa was accommodated with this position and a bed of leaf-mould and sandy loam, and it has never looked back. It is now spreading like Helixine Soleirolii, and bearing a fair crop of its attractive, scarlet-terra-cotta fruits. The overhanging rock of course, gives it protection from both scorching sun and winter frosts. *A. T. J.*

DIANTHUS GLACIALIS VAR. FREYNII.

Exquisite, indeed, in the rock garden, on a flattish terrace, is Dianthus glacialis var. Freynii, allied closely to D. microlepis, but differing mainly in having blue-grey and not green leaves. It is one of the tiny alpine gems so dear to the heart of the alpinist, and one which he never ceases to admire when in bloom. Nor, indeed, does his admiration wane when it passes out of flower, for the close tuft of tiny, blue-grey leaves rises but little above the soil and is so neat and compact that it is a picture in itself. Yet it is with keenest delight that we see it in flower, its small, pink flowers spread open wide and hardly rising above the exquisite little tuft which has given them birth.

D. Freynii—to use the name this plant most commonly bears—does not appear too fastidious in its diet, but it likes to be mulched with fine gravel and is never happier than in a moraine. It is worth while quoting Farrer's remarks on D. Freynii and G. microlepis as justifying my words of praise. He writes of these two that they "may be said botanically to come near D. glacialis; in every detail they are as far removed from it as possible in the gardener's eye—incomparably more exquisite, permanent, neat, minute and delightful." Can praise go higher? *S. Arnott.*

FLOWER GARDEN.

EUSTOMA RUSSELLIANUM AS A BEDDING PLANT.

The beautiful Eustoma Russellianum (Fig. 94) is usually regarded as a greenhouse plant, and a difficult one at that, thus it will surprise many who may have attempted to grow it to find a bed of close on one thousand plants making a fine display in Hyde Park. Mr. T. Hay, the Superintendent, is always keen to try a new or neglected old plant for a display in the open, and the fact that a plant is difficult does not in any way deter him from trying to master its cultivation for his particular purpose. He has done much to make the parks under his charge more interesting and attractive, and not only to the general public, but also to the lover of choice and uncommon plants.

Associated with the Eustoma is Sabbatia campestris, another beautiful plant which, I believe, has not been generally in cultivation for many years. It produces its rose-coloured flowers very freely. They both belong to the same natural order, viz., Gentianaceae, and this gives an added interest to this unique bed. Both plants are best treated as biennials; the Eustoma should be sown about the middle of May, and the seedlings grown on in a cool house or cold frame. *J. C.*

SPARAXIS PULCHERRIMA.

I would offer a word of praise for the Wand Flower which has been flowering in my border for the past three weeks and looks as though it will continue to bloom for some time.

The species is well-named, for the grass-like leaves, surmounted by graceful flower stems, look like a fairy's wand. The individual flowers resemble those of a Freesia in shape, and their colour is a very pleasing rosy-purple.

There are few more attractive border flowers, and those who desire to plant it during the coming autumn may be informed that it will succeed in the average herbaceous border.

As this species attains the height of five feet, it should be planted amongst tall-growing subjects, and transplanting should only be done when there are definite signs of deterioration of vigour, for it is very impatient of root disturbance. *Geo. H. Copley, N. D. H.*

SCROPHULARIA AQUATICA VARIEGATA.

The above plant does not appear to have been recorded under its correct name for more than half-a-century. It does not appear amongst the new plants recorded in the *Bulletin of Miscellaneous Information* issued from Kew since 1876; but the plant is older than that and enjoyed a considerable vogue during the time that carpet bedding was popular, and all sorts of coloured and variegated plants were in request for carrying out parti-coloured designs. In those days it was pinched frequently to keep it dwarf, though it might have been allowed to grow to its natural height without the flowers, and its use thus extended as a dot plant, for the variegation (a creamy yellow at first) is quite conspicuous and effective. The name the plant bore in those days and even now is S. nodosa variegata, often wrongly spelt, possibly through the custom of transcribing the name from old and decayed labels to new ones.

S. nodosa has acute or acuminate leaves and a knotty, tuberous root. S. aquatica has leaves that are often twice as long as those of the other and they are blunt, while the rootstock is not tuberous. The two species may easily be distinguished by the above characters, though they have several other marks of distinction. *J. F.*

OENOTHERA BERTERIANA.

This attractive plant, raised from seed recently collected by Mr. H. Coomber, was introduced from Chile many years ago, but was apparently soon lost to cultivation as it is never referred to in any of the standard works. It is flowering freely in the open border at the present time, but as these plants were not put out until late spring it is difficult to say whether they will be hardy or perennial. However, an abundance of seed is setting, which should ensure its continued existence, as the seed from Chili germinated freely.

This Oenothera is a loose-growing plant, producing strong, spreading growths three feet or so in length, arising from a woody root-stock. They are sometimes branched near the summit, coloured light green, tinted with red, sometimes turning to light brown, and hairy.

The leaves are sessile and vary considerably in length; those near the bases of the plant are in some instances twelve inches long, while those higher up the stem are much shorter. They are narrowly lanceolate in shape, tapering to a slender apex, both surfaces being rich glossy green and sometimes slightly hairy, the broad, whitish midrib being prominent, and the margins distantly and irregularly dentated.

The long-tubed flowers are produced singly from the axils of the leaves. They are large and of striking appearance, being three inches or four inches in diameter, and of a rich yellow colour, fading to a salmon shade. The petals are broadly ovate and notched at the top, the centre being ridged and the margins slightly wrinkled, while the four reflexed sepals are light green, tinted with red, hairy, and narrowly lanceolate in shape, the apices being furnished with short, blunt prongs.

Oenothera Berteriana should prove a useful addition to the garden, being free both in growth and the production of its blooms. *A. G. F.*

TREES AND SHRUBS.

THE JACARANDAS OF PRETORIA.

Pretoria, the capital of the Transvaal, is proud of its fine streets, planted with Jacarandas. The species planted are J. ovalifolia and J. mimosaefolia, and between these two there is little difference.

Jacarandas are natives of Brazil, and in most sub-tropical countries are used as trees for streets and gardens. They grow to a height of thirty feet to fifty feet, are deciduous, have long, spreading branches, and although very often cut back by frost, they rapidly recover their beauty.

During the months of October, November and December the streets of Pretoria are a wonderful sight, when the Jacarandas carry masses of blue flowers and are clothed with their beautiful, Fern-like leaves. June and July are our winter months in Pretoria, and the trees are mostly pruned in August.

Walton Jamieson, Esq., when Town Engineer, for the Pretoria municipality (he is now Town Engineer at Kimberley, Orange Free State), was the first to plant Jacarandas as street trees in Pretoria, where he became known by the name of "Jacaranda Jim." Each year the municipality of Pretoria plants about 2,000 to 3,000 Jacarandas, the young trees being grown in Princess Park nurseries at Pretoria-west. Seeds are collected during the winter months and sown about the middle of August, in a well-prepared bed in the open ground, but before being sown they are soaked over night in water. A good covering of sandy soil is given and the beds are well-watered, but owing to the terrific rainstorms experienced, they are well covered at night.

The seeds soon germinate, and when the seedlings are about four inches to five inches high, they are placed in tins, not in pots (English gardeners may smile at this), but all jam tins, syrup tins, or any other sorts of tins are used for transplanting trees, shrubs, Roses, Carnations and bedding plants. Pots are only used for conservatory plants in Pretoria, for if they were used outside the soil would dry out too quickly, and the plants suffer severely.

When the young Jacarandas are "tinned off" in lb. tins, they are usually placed in a shady position or covered over with straw mats, as they suffer a little during the first week.

The seedlings are kept in the tins for twelve months and the next year are transferred to tins of a larger size, usually oatmeal tins. They are often placed near a hedge for protection from frost, until the trees are about five feet to six feet in height, and ready for the streets. During the first year after planting they require to be watered occasionally, but after that watering ceases as Jacarandas are deep rooting trees. During the first two years the young trees have their stems covered as a protection from frost, but after five or six years the Jacarandas commence to bloom and afterwards flower annually.

Seeds are produced very freely, and many thousands are distributed annually by the Pretoria Municipality.

Other trees used for street planting in Pretoria include Platanus occidentalis, P. orientalis, Schinus Molle, Pinus sylvestris, P. canariensis, Ligustrum japonicum, species of Quercus and various Palms—Phoenix canariensis in particular. *H. Bruins-Lich.*

AILANTHUS ALTISSIMA.

The Tree of Heaven, Ailanthus altissima, or, as more commonly known in gardens, A. glandulosa, was first grown in Europe in 1751, from seed sent from Pekin, and the first Ailanthus was planted in the United States by William Hamilton. When, at a later date, it was found that one of the silkworms would feed on its leaves, the Ailanthus was widely and successfully planted in France.

As a street tree it was used extensively in Paris during the early years of the second Empire. The strong and offensive odour of the flowers soon convinced the citizens of Paris, and also of American towns where the Ailanthus had been planted in large numbers, that, in despite of its vigorous growth and the luxuriance of its long, gracefully-drooping habit, as a street tree, the Ailanthus will not do. Its brief spell of popularity was followed by one of persecution, and large numbers of trees recently planted so largely were cut down. Nevertheless, except for the disagreeable odour of its flowers, the Tree of Heaven is an ideal street tree for large thoroughfares. Its growth is rapid, it withstands drought and heat, and is unharmed by the gas escaping from leaky gas-pipes—so frequently a source of injury to street trees. Insects avoid it and it is propagated very easily from root-cuttings. It is curious, therefore, that before the rage for destruction overtook the Parisian and American dwellers in cities they had not discovered that the tree is almost completely dioecious, that is, individual trees are either male or female, and that the malodorous habit is confined to the male flowers, the female flowers being scentless. Occasionally, male flowers are found in the clusters of female flowers, but they are not in sufficient numbers to cause offence. The female tree, which is evidently the one to plant, is, moreover, more ornamental than the male by reason of its great terminal clusters of winged fruits, yellow in the type, but bright red in the variety erythrocarpa, The variety has also another advantage over the type in that the upper surfaces of the leaves are darker green and the lower lighter.

Another use to which the Tree of Heaven has been put is that of dune fixing, and it was planted in sterile, shifting sands on the shores of the Black Sea, and proved an admirable stabilizer of the dune.

Lastly, the wood of Ailanthus altissima is of considerable value to the cabinet-maker, seasoning easily, warping but little, and taking on a clear yellow colour not unlike that of satin wood.

Having regard to the fact that it flourishes on sandy coasts, it would be well worth the while of some of our seaside towns to plant Ailanthus for shade and shelter.

Although the Ailanthus is a native of China, it is said that the tree has hitherto hidden its native place successfully from the prying eyes of European travellers in the Celestial Empire, and that no explorer has as yet seen it in the wild state.

Two other species of Western China are, however, known, A. Giraldii and A. Vilmoriniana, the former characterised by prickly branches, the latter by downy branchlets. *K.*

NUTTALLIA CERASIFORMIS.

A native of north California, this March-flowering shrub is perfectly hardy in this country. Although its flowers have no bright colours to recommend them, the species is undoubtedly worthy of a place in the garden by reason of its early season of blooming and the profusion with which the flowers are borne. From a short distance, one might mistake the plant for a greenish-flowered Ribes, which it resembles in habit of growth.

The flowers are borne in pendent racemes from one-and-a-half-inch to two inches long; each has five small, white petals and a green, five-lobed, bell-shaped calyx. They spring from the axils of conspicuous bracts and are almond-scented.

As a rule, the male and female flowers are produced on different plants, but a hermaphrodite form is known. From a decorative point of view, the male plant is the better, but it is worth while including a few specimens of the female when planting to obtain a show of the abundantly produced, purple, small, Plum-like fruits.

A well-drained, loamy soil suits the Nuttallia admirably. Cuttings root readily and the plant may also be increased by means of seed. *T. H. Everett.*

ORCHID NOTES AND GLEANINGS.

VANDA COERULEA.

This lovely Vanda, first discovered by William Griffith in 1837, on the Khasia Hills, has always been a favourite plant with Orchid lovers. When seen at its best it is a delightful species but to cultivate and flower it successfully requires a somewhat special treatment, although individual plants are occasionally found in a thriving condition under unorthodox methods of culture.

Vanda coerulea is found growing on small, gnarled and very sparsely-leaved trees at an elevation of 3,000 to 4,000 feet, so that it is fully exposed to sun, rain and wind. There is very little moss or lichen on the branches of these trees, and the roots of the Orchids ramble over the rough bark. The atmosphere is, on the whole, humid, and extremely so during the rainy period, but not excessively damp or hot during the flowering season, when the temperature ranges between 60° and 80°; there is much sunshine, and both the air and the bark are dry during the day. In July and August, during the rains, the temperature is a little higher, but in winter much lower.

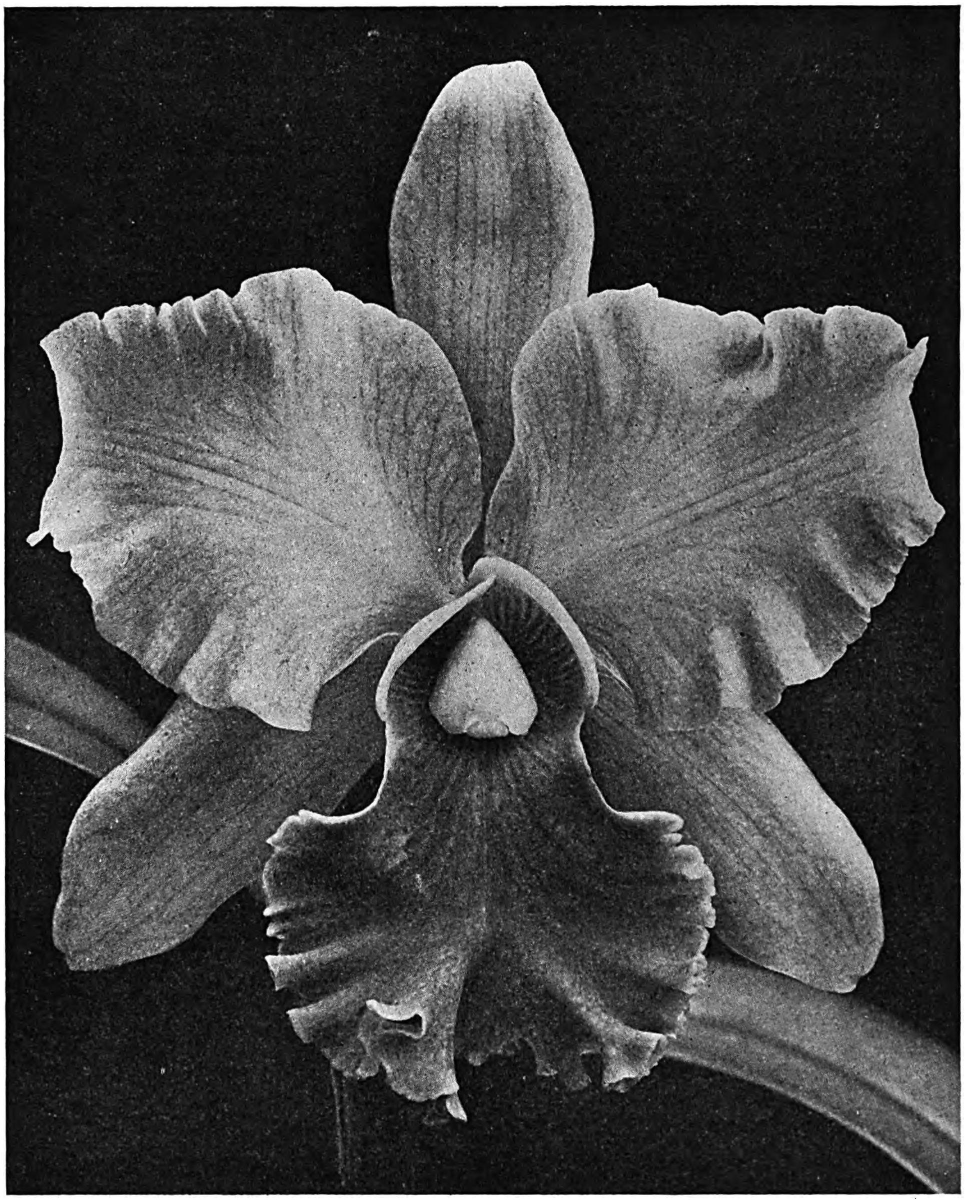


FIG. 95.—LAELIO-CATTLEYA CANBERRA.

R.H.S. Award of Merit, August 27. Flowers golden-orange, ruby and rose. Shown by Messrs. Cowan, Southgate. (see p. 199).

As a proof of the high estimation in which this Orchid has been and is still held by amateurs, I need only point to the numbers of plants imported annually, and the unusual number of coloured illustrations of it which have appeared in horticultural periodicals.

Little can be added to the description given of the conditions under which V. coerulea grows in its native habitat, but the climate data afford only a slender clue to the cultural treatment necessary in our glasshouses, as the extensive range of temperature and the excessive downpour of rain during the growing season are conditions we cannot imitate.

During its period of active growth, V. coerulea requires the lightest position in the East Indian house, with frequent sprayings on all favourable occasions, a liberal supply of fresh air at all times, and a humid atmosphere. It may be grown in pans, baskets or pots, in a compost of Osmunda fibre and live Sphagnum-moss, and care must be taken that the compost is not allowed to decay and become sour.

So soon as the flowers are ready to expand, the plants should be removed to a cooler and drier house, with a temperature of 55° to 60°, while an abundant supply of fresh air should be admitted whenever the outside conditions are favourable. It is seldom that any two plants of this beautiful species have flowers exactly alike. Almost every shade of colour is seen, from a soft, bluish-tinted white to a deep blue; there is also considerable diversity in the size of the flowers, but the varieties most sought after are those with blooms of a rich coerulean blue, of rounded form and large size.

Some remarkably fine varieties of this delightful species have been shown in the past, some of them coming from the Shan States, a habitat which has proved to be rich in remarkable forms. Nine First Class Certificates have been awarded to fine varieties, and three Awards of Merit. I believe there is but one hybrid in which V. coerulea figures as a parent, and that is Vanda amoena, first shown on September 21, 1897. Vanda amoena Sanderae, a variety of this hybrid, was shown on August 4, 1908. V. amoena is the result of crossing V. coerulea with V. Roxburghii. *J. T. B.*

INDOOR PLANTS.

DATURA SUAVEOLENS.

As an evergreen flowering shrub for cool greenhouse cultivation, Datura suaveolens is a subject worthy of notice. It was introduced from Mexico in 1733, and is sometimes known as Brugmansia.

The large, white, trumpet-shaped flowers are produced in August and are deliciously fragrant. The leaves are elliptic-oblong in shape with entire margins, glabrous above and slightly downy beneath. Under favourable conditions the plant will grow to a height of ten feet or more.

If necessary it should be potted early in the spring, just as the growth commences, using a compost of light, fibrous loam, with a third part of old manure and leaf-mould, and a sprinkling of sand. The pots should be well drained, otherwise the copious waterings which should be given when the plant is in full growth will result in the soil becoming waterlogged, a condition which will first cause the yellowing and dropping of the leaves, and ultimately the death of the plant.

The growth made during the early part of the summer should be well ripened towards autumn by free exposure to sun and air. To this end the plants may be stood out-of-doors in a sheltered, sunny spot in autumn, but they must be taken into a cool, airy house before frosts occur, and should be kept on the dry side during winter.

Cuttings six inches long, pulled from the plant, with a heel, in spring, and inserted in sandy soil with a bottom-heat of 60° will root readily. *R. K.*

THUNBERGIA GIBSONII.

THE vivid orange colouring of the flowers of this climbing or trailing plant is scarcely surpassed in depth or intensity by any other flower, and for this reason alone the plant should find a place, when it is obtainable, in every collection of indoor plants.

It is of moderate growth and thrives in an ordinary greenhouse; it enjoys plenty of sunshine and will grow well in soil consisting of loam, leaf-mould and sand. The brilliant flowers are freely produced in summer from the axils of the leaves. Seeds, which the plant produces freely, offer a ready means of increase.

I know little of the history of this very showy plant, but believe it to be a native of South Africa; it is of perennial duration.

TACSONIAS.

THESE elegant climbing subjects are suitable for cultivation in large conservatories and greenhouses as wall, roof or pillar plants, and the pendent flowers are particularly effective when they hang from plants trained under the roof. The majority of popular species grow freely and are not fastidious regarding soil, provided the drainage is thorough and copious supplies of water are given during the growing season. When planted in borders—and this is by far the best method of growing Tacsonias—the roots should be partially restricted, otherwise overluxuriant growth may be made at the expense of floriferousness. An annual thinning of the shoots and cutting back of main stems are requisite for established plants.

A mixture of three parts loam, one part peat and some sharp sand is an admirable rooting medium, and it is a wise proceeding to exercise considerable restraint in the use of manure and stimulants.

Tacsonia insignis, with crimson flowers; T. mollissima, soft pink; T. Van-Volxemii, scarlet; and T. mixta, pink; are well-known and very beautiful species.

Propagation is readily effected by means of cuttings of young shoots removed in spring, with a "heel" attached, and inserted in a close propagating case. Seeds also afford a ready means of increase—I have, indeed, found many self-sown seedlings around an old plant of T. Van-Volxemii.

The chief characteristics of the genus are the long, cylindrical tube of the calyx, furnished with two crowns, one at the throat and the other near the base; petals five, usually smaller than the calyx lobes; corona entire or filamentose; stamens five; leaves alternate; tendrils lateral, undivided. The main difference between Passiflora and Tacsonia is the long, cylindrical tube with the two crowns.

EUCHARIS.

WHERE a sufficiently high temperature can be maintained, few plants are more worthy of cultivation than the old favourite E. grandiflora (syn. amazonica).

Good examples may be grown and flowered satisfactorily in pots of moderate dimensions, but possibly the best results are obtained when the bulbs are planted in a bed or a brick pit in a stove or other warm house; the plants thrive in rich, turfy loam with the addition of plenty of sand, and are greatly benefited, when well established, by frequent and copious applications of liquid manure. Generous shade is requisite during the summer months and during the early autumn a partial rest is conducive to free-flowering, always remembering that water must not be entirely withheld; at this period a slightly lower temperature may be allowed. It is well to realise that restriction of the roots is not necessary or advisable as it is with so many other bulbous plants; indeed, such restriction will only starve the bulbs and prevent natural increase; therefore ample root-room should be provided, and growth encouraged.

Propagation is easily effected by means of offsets, but too frequent separation and disturbance is inimical to success; an occasional surface dressing of fresh, rich soil is much to be preferred until division and replanting are necessary.

Eucharis grandiflora possesses no well-defined season of flowering; with suitable treatment established plants will flower two or three times a year, and after each crop of blooms it is an excellent plan to rest the plants partially for a short period.

It is very necessary to keep the plants clean and this is not a difficult matter, although the species is subject to attacks of aphides, scale and mealy bug.

E. grandiflora (syn. amazonica) was introduced from New Grenada in 1854, and is figured in *Bot. Mag.*, t. 4971. E. candida differs little from the better-known species; the flowers are smaller and more elegant, and the leaves solitary to each bulb, whereas they are several to a bulb of E. grandiflora. E. Sanderiana possesses the habit and foliage of E. grandiflora; but has a yellow interior to the tube of its otherwise pure white flowers. *Ralph E. Arnold.*

THE INCIDENCE OF INSECT ATTACK.

FROM an economic point of view, a study of some of the factors which underlie the epidemic appearance of any given insect is a matter of some importance. Each year insect pests take toll of our crops; in some years the toll is greater than others, not because the individual insects eat more in some years than others, but because they are present in greater numbers. Why is it that certain insects are present in large numbers one year and can hardly be found in the same district the following year? Why is it that an insect like the Gooseberry Sawfly (Nematus ribesii, Curtis) should in the present season cause great damage in certain districts of Britain, while in other districts it is only possible to find a specimen here and there?

If the Gooseberry Sawfly had a limited distribution one could understand the problem, but its distribution is widespread and in most seasons its damage is widespread also, yet in 1927 the damage reported is patchy. Again, why is it that certain insects flourish only upon unhealthy trees? If we could answer some of these questions we should be in a better position to fight insect attacks.

Generally speaking, all insects are kept within certain definite limits by what we term "the balance of Nature." We are apt to talk a good deal about this mysterious condition, but if we are honest with ourselves we must admit that we know very little about the factors which makes this balance hold true. We take for granted this "balance of Nature"; it is only when some of the factors favour the insect rather than the balance that our attention is drawn to the epidemic attack which is the result.

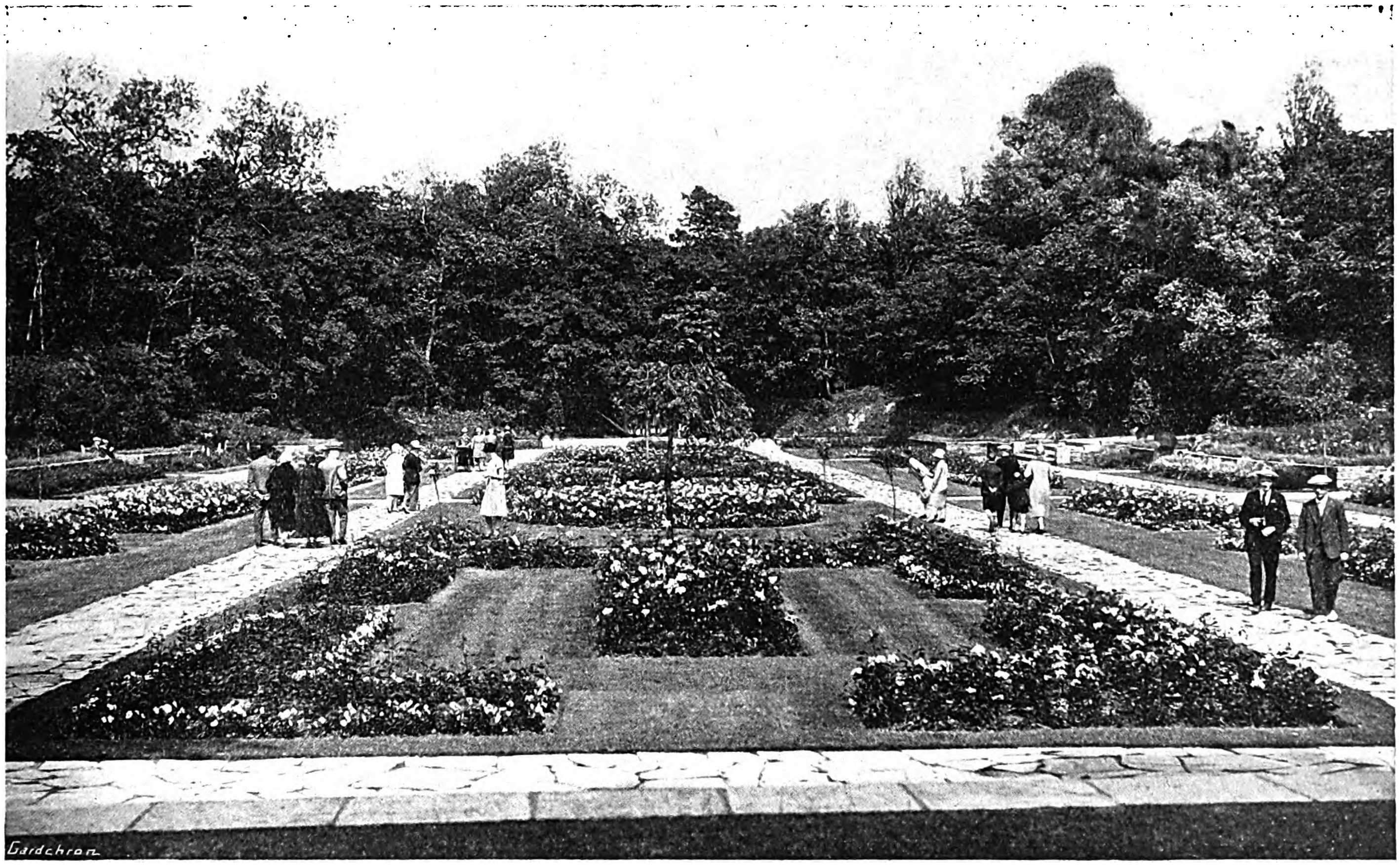
It appears to me that the greatest factor in the life of most insects is weather conditions. Take the example of a common garden pest, the Onion Fly (Hylemyia antiqua, Meigen). I think we may assume this pest takes very little notice of weather conditions while in the egg, larval and pupal stages; low temperatures during any of these stages do no more than to delay the stage in which the low temperature occurs. Wet weather during any of the three stages mentioned above has little or no influence on the life history of the individual concerned. It is during the perfect stage that weather conditions play their part for good or ill. Fine weather allows the adult Onion flies to feed, pair, and deposit their eggs upon a suitable host plant. Wet weather prevents the adult flies from feeding, they shelter in any convenient spot and often die before any chance of reaching an Onion bed and depositing fertile eggs occurs. I have noticed that Onion flies which emerge under artificial conditions, if unfed, die after a very short period, but if fed with sugar remain alive for many days. It is not safe to assume that what happens under artificial conditions actually happens in nature, but this fact of unfed Onion Flies dying after a few hours does tempt one to think that unless those Onion Flies which emerge from the soil under natural conditions can find flowers from which they can obtain nectar, they are apt to die from sheer starvation. I have never yet seen flies of any sort feeding upon flowers during rain, and my observations point also to the conclusion that most flies hate windy weather, and are extremely inactive when the temperature is low.

It is not always that the factor of weather plays its part solely in the perfect insect stage. I have noticed that in the case of Lepidopterous insects it is often the larval stage that suffers from bad weather conditions, *e.g.*, in the case of the Cabbage Moth (Mamestra brassicae); bad flying conditions must prevent the females from distributing their numerous eggs over such a wide area as would be the case under good flying conditions; this would not be such a great handicap as it would be to certain other insects' larvae, because when a Cabbage Moth larva emerges from the egg it is extremely active and can crawl a long way in search of food; under artificial conditions the baby larvae of this moth will live for seven or eight days without food, and will crawl many yards in search of food. Indifferent weather conditions plays a part later in the life history of the Cabbage Moth. If one is feeding a batch of caterpillars of this moth and using dry Cabbage leaves for the purpose, let him use wet Cabbage leaves, and he will find that half his caterpillars have died before they are a day older. Again, let us not assume that what happens under artificial conditions actually happens in nature. Evidence as to what does happen under natural conditions can be obtained by examining an infested Cabbage after a break in the weather following a long dry spell. One or more of the following four kinds of caterpillars are likely to be found within: the Large Cabbage White (Pieris brassicae, L.); the Small Cabbage White (P. rapae, L.); the Cabbage Moth (Mamestra brassicae); and the Garden Pebble (Pionea forficalis, L.). I have found all four caterpillars dead under the conditions mentioned. The data given is, perhaps, sufficient to justify the conclusion that a sudden rush of sap and wet foliage will kill many caterpillars, apparently by scouring them.

So far, I have only been considering the effect of rain and low temperature upon insect life, but there is another matter: indirectly, fine weather may reduce insect pests. I remember an autumn a few years ago, when in my district there was a bad attack of Large Cabbage White Butterfly; hardly a leaf of any Brassica remained whole, while many were reduced to skeletons. Eventually, when the caterpillars were fully fed, they could be found in hundreds upon the walls, fences and hedges, seeking suitable places to pupate. It looked certain that in the following spring large numbers of this pest would be on the wing, and yet the following spring was noticeable for the few specimens seen. The explanation of this was that a large percentage of the larvae had been attacked by the parasitic Braconid (Apanteles glomeratus). Instead of the Cabbage White larvae turning into chrysalis the parasites emerged from the larvae and spun up their tiny yellow cocoons while their hosts died.

An examination of the specimens that changed into the pupae state showed that all was not well; quite a number of them, instead of containing an embryo butterfly contained the maggots of the parasite Chalcid (Pteromalus puparum, L.). It seems that the conditions which favoured the large number of Cabbage White butterflies also favoured their parasites, so that the net result of the fine weather conditions was a ruined Cabbage crop in the autumn and very few Large Cabbage Whites the following spring.

Another factor which favours some insects is undoubtedly an unhealthy host, *e.g.*, Apple Mussel Scale (Mytilaspis pomorum, Bouché) often becomes rampant on trees that have been badly worked, bitten by rabbits, or are growing under some unsuitable soil condition. Some may consider that the unhealthy host is the natural result of having to support a large colony of scale insects, but I am certain that Mussel Scale does make most headway upon trees that are not in a flourishing condition.
Somerset.



[*Photo by Kay and Foley.*

FIG. 96.—THE NEW ROSE GARDEN AT HESKETH PARK, SOUTHPORT.

PUBLIC PARKS AND GARDENS.

Mr. K. G. R. Vaizey has offered to the Urban District Council of Halstead, Essex, twenty acres of land for conversion into a playing field.

Ashton-under-Lyne Town Council proposes to borrow £3,740 for the purchase of land near Stockport Road for the provision of a recreation ground.

Bangor (Carnarvonshire) Corporation has agreed to purchase the Old Camp field for a pleasure ground.

The Worcester City Playgrounds and Open Spaces Society, in conjunction with the National Playing Fields Association, contemplates a scheme for laying-out the Worcester race course as a public playing field. The lay-out provides for eleven cricket pitches, twelve tennis courts, six hockey grounds, six football pitches, a running track, a netball pitch, a children's playground, and a pavilion.

The new Rose Garden in Hesketh Park, Southport (Fig. 96) was constructed during the winter of 1926-7. It is 280 feet in length by 92 feet in width, and contains upwards of 4,500 Roses in twenty-seven distinct varieties, representing many well-known kinds, such as Betty Uprichard, Covent Garden, Dorothy Page Roberts, Emma Wright, General McArthur, Hortulanus Budde, Lady Inchiquin, Mabel Morse, Mrs. Henry Morse, Shot Silk, Souvenir de Claudius Pernet, and W. C. Gaunt. The attractiveness of this Rose garden during the present season is ample evidence of the thoroughly sound manner in which Mr. Clark, the Superintendent of the Southport Park, laid the foundations of success. There is another delightful Rose Garden in this beautiful park, quite secluded, below the general level, surrounded by herbaceous borders and bounded by a high hedge.

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA*.

XV.—SOME PRIMULAS.

THE toll of Primulas from the Irrawaddy-Brahmaputra divide, though not so interesting as the Tsangpo collection, comprised at least six new species, and several which, though not new, are not in cultivation. Some interesting extensions in the distribution of known species were also observed.

One of the most charming alpine Primulas is the violet P. Wattii. The large, bell-shaped, frilled corollas are tightly compressed into a short, blunt cone at the end of a six-inch stem, which rises from a flattened rosette of toothed and very downy leaves. The plant was both rare and local, being confined to one alpine gulley; half-a-dozen flowering specimens were found on June 30, and in October I made three trips after seeds, which, however, resulted in no more than some three dozen heads. The original home of P. Wattii is Sikkim. Here it grew on a precipitous, south-facing, alpine meadow slope, thickly covered with flowers, including P. serratifolia, dwarf Iris, Nomocharis sp., Pedicularis, spp., etc., at an altitude of 13,000 to 14,000 feet. At no great height above this plant life practically ceased amidst a wilderness of rocks and snow-beds; yet on the apparently bare cliffs my sight was arrested by one of the daintiest piccaninny Primulas imaginable, strung along the joints. This was a twin sister of 'Claret Cup,' dressed in lavender and crimson, a wee, nodding fairy, with one or two, rarely three, flowers on the thread-like stem. The plant was not rare, but it was so minute, not exceeding an inch in stature, that it was hard to see in fruit, and, though I gathered several hundred heads, there was not very much of the pale golden seed to show for it. 'Blue Microbe' gets specific rank as Primula fea, W. W. Sm.

Lower down on the same escarpment was P. rhodochroa, which has one or two rosy-red and yellow flowers nestling down in a rosette of toothed and very mealy leaves. It would be almost invisible to anyone whose eyes were not trained to see Primulas, so closely does it press itself into the lichen or grass-covered rocks. On the turf, too, was P. Genestieriana, another dwarf, only tolerated for the sake of its rich relations. I realised that there would be great difficulty in getting seeds of these mites, scattered over the bare immensity of Olympus, and decided to start a rock garden of my own. I therefore removed a consignment of 'Claret Cup,' 'Blue Microbe,' 'P. rhodochroa' and P. moschata to my base camp—the fear of exterminating these rare plants seemed remote—and planted them on a rock, alongside a blazing slab of Rhododendron repens, planted at the same time to decoy insects. All the Primulas set good seeds.

Most of the July-flowering plants were high alpines, but a few shrubs may be mentioned. Rhododendron 'Cherry Brandy,' finest of the Thomsonii group, was in full bloom, and there was a yellow 'Campylogynum,' and R. saluenense, which flaunts large, dusky-purple flowers, much more gaudy than those of R. calostrotum, or R. rivulare, armoured on the reverse with bands of silver scales.

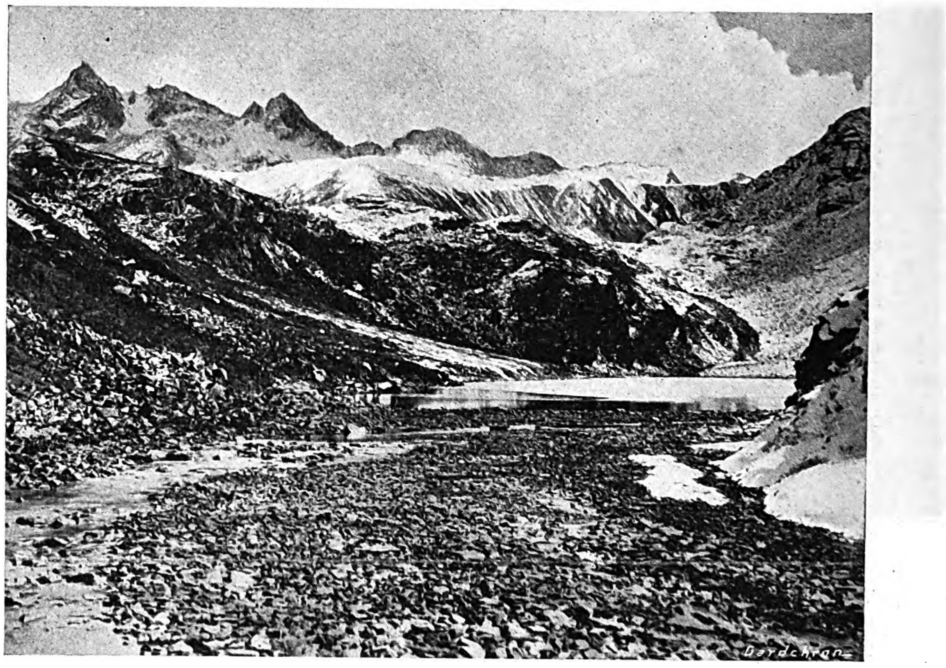

FIG. 97.—THE DIPHUK LA (14,300 FT.) AND THE SECOND LAKE, FROM THE TIBET OR WESTERN SIDE.

But the most intriguing Rhododendron was one of the big-leafed 'repens' type. I had found a plant of this at the end of June at the foot of a granite cliff, with one lingering flower of a pinkish tint, but probably jaded and faded. The leaf, the mound-like growth, and the triple-flowered truss at once recalled the famous 'Carmelita' of Doshong La days. Prolonged search failed to reveal another plant, and there were only two capsules on this one. However, I did not despair. It is a sound rule if you find a solitary plant in a valley, and cannot tell where to find more, to leave it alone, and then go home, and—noting the type of ground—carefully climb straight up the mountain side, a thousand, two thousand, even three thousand feet, if necessary, and start casting round for the same type of cover; if you do not find more of your plant sooner or later, you will be unlucky. The fact is, the seeds of alpine plants are brought down by water or riding on boulders, or avalanches, or perhaps even by birds, and odd plants appear as outliers. I found the home of P. Wattii by following this plan. 'Claret Cup' first showed itself in the valley, three plants only, and a few days later I found sheets of it.

But the cliff at whose foot this particular Rhododendron grew barred the way to a steep alpine glen, which was almost certainly its home. How to reach that glen was the problem. The cliff was precipitous, but there was a way if the shrubs which clothed most of the face would bear my weight. But at this season the glen was still packed with snow, and such a deluge of water was pouring over the face that I dare not hazard the climb. 'Safety first,' I thought, and postponed the ordeal to a more propitious occasion. When, at last, October brought a little sunshine, I started one fine morning to climb the cliff, and when I reached the top, I found myself in a tilted, granite glen, whose slab walls were carpeted with dwarf Rhododendrons and dipped steeply towards the escarpment overlooking the main valley. The bed of the stream was broken by bare cliffs, and nuzzling against these cliffs I found two large plants of the wanted Rhododendron whose hard, interlacing stems were all crossed and bent together in a foot-deep puzzle. They had flowered freely. This plant was not, I think, 'Carmelita,' but it was of similar deportment. In its extreme rarity, its size, its foliage, and its habit, to say nothing of its three-pronged fruit truss, it was in such acute contrast to the creeping R. repens, which encrusted the turf slopes below the escarpment, that I find some difficulty in reconciling these facts with the view expressed by Edinburgh, namely, that 'Carmelita' is only a variety of 'Scarlet Runner.' However, in stressing their differences, I can only write as a field botanist, and I do not propose to dispute the judgment of Mr. Tagg, who has seen many more Rhododendrons than I have; but for garden purposes the two plants are certainly highly dissimilar.

On July 6 we moved camp two miles up the valley to the highest Yak camp (12,000 feet), as this was the most convenient jumping-off place for the Diphuk La (Figs. 97, 98 and 99), which was now clearly visible in the early mornings, before the mist came up. Curiously enough, the weather was a little better at this height, and we had an occasional burst of sunshine, although just down the valley we could see massive banks of cloud fairly pumping rain over our old camp.

An ascent of the limestone range to 15,000 feet yielded a number of interesting plants, including the crimson Primula cycliophylla, (one of the Dryadifolia section), and the tiny and unlovely P. moschata, another Sikkim plant. The dwarf alpine Primulas, apart from the fact that we cannot keep them, are too insignificant and colourless for the garden, but a form of P.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, and August 20, 1927.

bella which grew here was an exception to that rule. Peculiar also to the limestone range which crossed the valley here were the following: A prickly blue Meconopsis, like M. Prattii, Rhododendron 'Limestone Rose' (Saluenense) now in glorious bloom; a dwarf Androsace with carmine flowers; Codonopsis sp., Solms-Laubachia sp. (in fruit, mostly); and a new Primula of the Muscarioides section called P. euchaites, a rare plant, for I saw only two. The golden Anemone, too, was a limestone lover, and so was Anemone rupicola from the other side of the pass.

The long, steep slopes below the gaunt cliffs were well covered with flowers, including Primula sikkimensis, Cypripedium tibeticum, Meconopsis Baileyi, M. violacea, a yellow-speckled Nomocharis with fragrant flowers (much more abundant on the other side of the pass), Salvia sp., Geranium sp., Pedicularis spp., Lloydia, Podophyllum, etc. The streams also were filled with flowers, such as Primula sikkimensis, P. Wardii and the dusky-purple P. apoclita, one of the darkest of the Muscarioides section. On sheltered slopes and on the limestone cliffs also small shrubs grew in considerable profusion, and these included, besides Rhododendrons, several species of Berberis and Cotoneaster, Ephedra, Pyrus, Cassiope, Juniperus, Lonicera and Daphne; the only Rhododendrons seen growing on the limestone were the prostrate 'Saluenense' called 'Limestone Rose' and two 'Lepidotums,' one with purple, the other with yellow flowers, found growing on the cliff. There were plenty of Rhododendrons in flower here up to the middle of July, and these formed the bulk of the thickets on sheltered slopes; three 'Lapponicums,' 'Scarlet Letter,' a late form of R. rivulare, and others.

On cliffs and screes were Primula bella, a charming little plant crowded with bright violet flowers on slender stems a good inch high; P. Genestieriana, on the highest alpine turf slopes; Polygonum Griffithii, and other rock species; Corydalis sp., white Morina, Helianthemum, Saxifraga, Senecio, Pinguicula, and a big Fritillaria, like F. Delavayi. A peculiarity about the upper Seinghku was this: that, though the snow line was exceptionally high, not less than 16,500 feet, yet there was practically no alpine flora above 15,000 feet. That is to say, a thousand or fifteen hundred feet of barren rock was interposed between the limit of plants and the limit of permanent snow, suggesting that the retreat of the glaciers is really quite modern, and that the flora has not yet had time to take advantage of it; but, of course, the vertical nature of the topmost cliffs and their perpetual bombardment of the long screes which slope from their base, as well as the dreadful winds which rage at this altitude, are factors to be reckoned with.

While scrambling up the slopes towards the head of the valley, I came upon five plants, and five only, of a pale-yellow-flowered Meconopsis which at the time I did not recognise as M. pseudointegrifolia; it seemed a more dainty and slender plant with smaller flowers, which in one plant at any rate were almost ivory-white. But there can be no doubt that it is at most a geographical form of M. pseudointegrifolia. The deep red form of M. impedita was also very abundant on stony ground, and the more I saw of it, the more I liked it. Several times I caught a plant against the light, high up, and it gleamed with a ruby glow, which was a miracle of colour.

The best of the 'Lapponicum' Rhododendrons was a biggish undershrub, growing so much as three feet to four feet high, with crisp, silver-grey foliage and dark purple-violet flowers, so dark as to be almost gloomy, relieved by a metallic shimmer of scales on the reverse. Here, again, the flowers required sunshine to be seen to advantage. While the higher slopes were often carpeted with dwarf Rhododendron, this species was not common there, but kept for choice to more sheltered nooks with 'Anthopogon' species and other shrubs; nor did it form extensive colonies like the others, but occurred in scattered clumps in the valley. The third 'Lapponicum' had small, purple flowers, and the tiniest bronzed leaves, with no very distinctive characters except all-round dwarfishness; it and the scented 'Lapponicum,' together with the 'Saluenense' R. rivulare, formed the bulk of the moorland carpet. Besides the plants mentioned as peculiar to the limestone, I found a number of other species thriving there, Isopyrum grandiflorum—still in flower; Potentilla peduncularis, a violet 'Sibirica' Iris (more abundant in the alpine meadows); a few small ground Orchids, Cremanthodiums, and so forth.

Thus the top end of the valley, where the Seinghku river had its source, was bounded by precipitous and rather barren cliffs, buttressed by huge, bare screes, with patches of meadow at the bottom of the valley, and strips of tangled thicket on the sheltered flanks. *F. Kingdon Ward.*

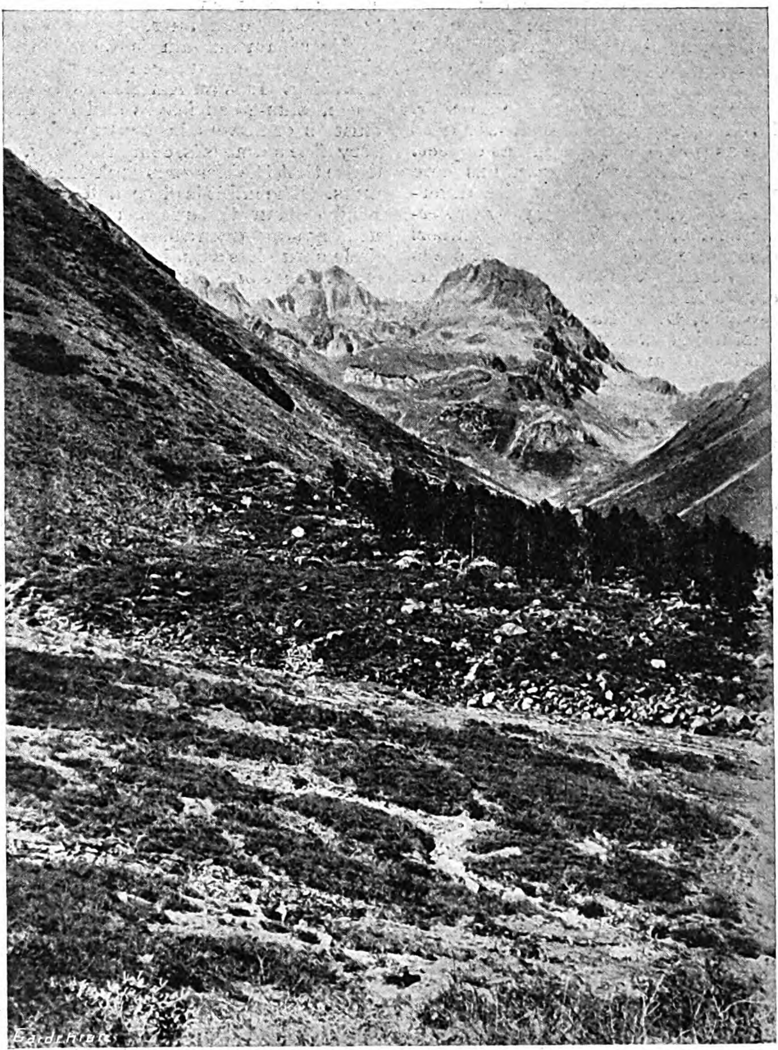

FIG. 98.—THE DIPHUK LA FROM THE BURMA SIDE; ANCIENT MORAINE IN THE FOREGROUND.

NOTES FROM A WELSH GARDEN.

MYRTUS nummularifolia, which, I am told, comes from the Falkland Islands, has proved quite hardy here, and that in a cold, low-lying, half-shaded part of the garden. Here it covers the soil with its thin net of slender, prostrate branches which are very brittle, and in colour a mahogany red that contrasts well with the dark green of the little, oval, leathery leaves. In early summer this delightful plant was starred with white flowers; now it is blooming again and carrying the fruits of its first crop. These fruits are as big as marrowfat Peas, white, with a tinting of pink, and they, like the blossoms, are held well up on the surface of the branches. The reader will be able to understand something of the conditions under which this charming Myrtle is prospering so well when I state that Schizocodon soldanelloides is close-by, enjoying a similar soil and position. This very beautiful and often difficult plant to manage is also giving us a second crop of flowers, a concession for which we have to thank the watery summer.

As Gentiana septemfida passes out of bloom—and three or four varieties of this splendid species extend the flowering period to three months—the Willow Gentians open their season. Here again, there seems to be no limit to the number of more or less distinct forms which are included under the name of G. asclepiadea. In some of these now flowering, which were raised from seeds taken from a perfectly stiff and upright variety, and which have all reverted to the arching habit, the flowers are a clear, rich sapphire colour that would not disgrace G. sino-ornata. In the woodland where some of the Gentians are growing, Cyclamen neapolitanum is flowering in quantity. C. cilicicum is also here and a large colony of C. europaeum put in a few years ago is becoming nicely established and yielding a number of the pretty, sweetly-scented flowers.

Nertera depressa, which occupies a cavity beneath a shelving rock facing north, is well-berried. This engaging little plant was not a success here until that particular site was provided, and it is evidently just what it wanted. I should like to be able to do as much for Parochaetus communis. This beautiful Himalayan plant either does too well or it is feeble and sulky. This year it was tried in rather warmer, yet moist soil, but, owing to the wet season, it has ramped away, covering a couple of square yards with a heavy crop of lush, Clover-like leaves and has not yielded a flower. There are evidently many forms of this plant, and it may be that some bloom more freely than others.

Aster Thompsonii is another Indian plant, but, unlike the above, it is invariably reliable here, never failing to give quantities of its refined, lavender-blue blossoms, and A. T. nana is equally satisfactory. A. pyrenaeus often leads one to believe that it will rival A. Thompsonii, but, though its colour is first-rate, its blooms do not seem to balance the rather heavy and downy leafage with which it is so generously endowed. Still, this is a useful late-bloomer for a cool place, and it does not look amiss with Senecio clivorum and Buphthalmum speciosum. Symphytum officinale var. bohemicum is of this herbaceous company, and it is one of the best of the Comfreys for the border. At any rate, it has been established three or four years in its present position and has not yet shown that passion for spreading so common to most of its race. It grows about two feet high and the flowers, of which a succession is maintained all summer and autumn, are a brilliant cherry-carmine. Macrotomia (Arnebia) echioides growing close by under similar cool conditions is another allied plant which has this year bloomed throughout the season. In spite of its merits, the Prophet Flower does not seem to be as popular as one might expect.

The very lovely Geranium Farreri has here every season expressed a very definite differentiation from its ally, G. argenteum, by flowering a second time, *i. e.*, in August and September. Last year this choice little plant ripened seeds which germinated freely. G. sanguineum var. lancastriense, also in the rock garden, and that magnificent species, G. anemonaefolium, in the border, will maintain the reputation of their race with much distinction until late autumn.

The rainy season has suited most of the Heathers admirably, the slopes occupied by them being of light, dry soil. Erica Williamsii, supposed to be a natural hybrid between E. Tetralix and E. vagans, has done exceptionally well, after having been rather disappointing, which suggests that it needs more moisture than was considered sufficient. E. vagans var. St. Keverne is still without a peer in its own way, and the much newer white E. v. Lyonesse and cherry-crimson E. v. Mrs. D. F. Maxwell are worthy companions without being rivals. One of the most interesting features of a Heath garden at this season are the self-sown seedlings which, as they come to maturity, show such extraordinary diversity in foliage, flower and habit. Even some of the Tree Heaths, notably E. lusitanica, have become naturalised during the last year or so, and it is interesting to note that the beautiful Daboecia polifolia alba will produce self-sown seedlings exactly like the parent.

Eucryphia pinnatifolia has been flowering well throughout August, but E. cordifolia is not so successful here. Of this beautiful species—so admirably described and illustrated in *The Gardeners' Chronicle* of August 13—my specimen is only eight feet high and may do better when more mature. At present it does not make its new growths until so late in the season that they have no time to ripen before the advent of frost, with the result that they get nipped. Pentstemon cordifolius has been, and is still, a mass of red-crimson bugles, a colour which, like that of the Fuchsias, always blends very happily with the warmer tints of the approaching autumn. This applies also to Berberidopsis corallina, which has an unusually good crop of its almost globular, glossy, blood-red flowers, and to the curious crimson and yellow "lanterns" of Abutilon megapotamicum.

Abelia Schumannii is maintaining the great promise it made when first introduced to this garden some three or four years ago. It is a healthy and robust little shrub and produces an abundance of bluish-lilac blossoms of good size from early summer until the first frosts of autumn. The shrubby Potentillas are, of course, also noted for being all-season bloomers, but P. manschurica, a dwarf species with very large, pure white flowers, is a particularly useful and handsome little shrub for the later summer. Among the Fuchsias, the exquisite F. recurva, having accidentally proved as hardy as most others, is now left outside all the winter without any protection, and 15° of frost are not infrequent here. Variegated shrubs do not appeal to me as a rule, but some forms of F. gracilis with ivory and pale green leaves are very effective just now in a mixed border, as is the old variety with foliage of a soft plum-purple. The clear blue of Ceratostigma Willmottianum strikes a note of distinction among these, but C. Griffithii is so slow in making growth that it is invariably overtaken by winter before it comes into flower.

Among the most pleasing of the shrubby Veronicas of the large-flowered section now blooming are the salmon-rose Gauntletti; the rich crimson Simon Delaux; Mont Blanc, pure white; and an old variety with enormous inflorescences of violet-purple blooms. V. Aoira, a neat, little, narrow-leaved species about two feet high, is always very generous with its small spikes of white flowers at this season, being preceded by the very similar shrub that came here labelled Eversley Seedling, and which carries a most amazing crop of fresh, rosy lilac blooms all the summer.

Hypericum aureum is one of the most distinctive of the shrubby members of its genus now flowering. It is an American species, with evergreen, blue-green leaves and terminal, upright clusters of flowers, in each of which the bunch of very fine stamens is, comparatively, so large and dense that the blossoms look like golden powder puffs. The habit is close and well-rounded, the height about three feet, and, as the branches usually start from a single stem, or short leg, the little shrub has a quaint and formal appearance. *A. T. Johnson, Ro Wen, Conway, N. Wales.*

NOTICES OF BOOKS.

The World's Food Plants.*

THOSE among our readers who can recollect reading and enjoying *Le Potager d'un Curieux*—of which the first edition appeared in 1884 and the last in 1899—will welcome a new volume from the pen of one of the collaborators in that unique work, namely, Monsieur D. Bois, now occupying the important position of Chef de Cultures at the Natural History Museum in Paris. The work in question, which is more or less a development of the *Potager*, is entitled *Les Plantes Alimentaires chez tous les Peuples et a Travers les Ages*, and it really does in great measure fulfil the promise of its very comprehensive title, so far as vegetables are concerned; we are promised a further volume, in which fruits will be dealt with. As the present volume consists of nearly six hundred large, closely-printed pages, it will be apparent that the author has given generously of the results of the painstaking and accurate researches which have occupied him for nearly half-a-century. Until 1908, when his friend and collaborator, M. Pailleux, died, the investigations which formed the subject matter of *Le Potager d'un Curieux* were carried on in M. Pailleux's garden at Crosnes, Seine-et-Oise; afterwards M. Bois continued them alone in the gardens of the Paris Natural History Museum—gardens which have been famous for centuries for their botanical value, for they were originally the "Jardin du Roi," whence issued so many plants new to western Europe, imported from all parts of the world and acclimatised and cultivated in the garden.

In an interesting introductory chapter, M. Bois sketches briefly the history of the domestication of plants which in prehistoric periods were used only as they were found growing, and neither cultivated nor preserved, those dependent on them for food simply moving on to other districts when food supplies appeared to be running short. It was not until the early Stone Age that attempts (and those of the most primitive description) were made to cultivate plants with the intention of providing food for a future period. There is, however, abundant evidence that the inhabitants of the lake dwellings (some of the earliest of which probably date back to the later Stone Age) had domestic animals, including the ox and sheep, and cultivated several different kinds of corn; they also grew Flax to produce linen for clothing, and made nets for fishing; the Pea, Bean and Lentil were included among the crops they grew, while of fruits it is certain that they had Apples, Pears, Grapes and wild Plums, for seeds of all these have been found in their dwellings.

M. Bois is of the opinion that a good many vegetables now in common use among the poor in France, which are gathered from the fields and hedge-rows and used in their natural state, might be very much improved by cultivation and selection, thus definitely increasing the number and variety of available edible vegetables. In France, where gastronomy is a fine art, this might well be the case, but in this country the natural conservatism of the average cook would militate against the success of such experiments.

After careful consideration of the question of classification, the author has adopted—very wisely, in our opinion—that of Bentham and Hooker, which will eminently satisfy all who have had a botanical training. For those who have not, there is an excellent alphabetical index, which enables any required subject to be found immediately.

The scope of the work is so immense that in a short review it is not possible to do more than glance at a very few of the vegetables dealt with. The author has many interesting things to say about the Soy Bean, which was cultivated in very remote times in China under the name of Shu, yet has never been found wild in that country. It may, however, have been derived by cultivation and selection from an ancestral type, Glycine ussuriensis, which grows in many parts of China and in Manchuria. It was introduced into France about the middle of the eighteenth century, but has never been successfully acclimatised, though M. Bois and M. Pailleux made several attempts at Crosnes. Cucurbits occupy a large section, including the little-known—and more usually classed among ornamental than economic plants—Momordica Charantia. It may be news, even to some Cactus enthusiasts, that the fruits of Echinocactus ingens are edible. It appears that in Mexico they are commonly cut in slices and preserved in sugar, the resulting conserve being known as Dulce de Visnaga. Those who have tasted it say that it is excellent, and would repay importation into Europe.

The volume, which is par excellence the work of a savant, will inevitably find its way into every botanical reference library, and will, we feel certain, quickly become a classic, ranking with the pioneer work of de Candolle, to whom M. Bois generously acknowledges his indebtedness.

The illustrations, which consist of line drawings beautifully executed, are mainly the work of Madame and Mademoiselle Bois, who are greatly to be congratulated on their delicate and accurate delineations.

Trade Marks.

MESSRS. RAYNER AND CO., Patent and Trade Mark Agents, of 5, Chancery Lane, London, have just issued the second edition of their booklet entitled *Unbranded*,* which contains some very useful information on the value of Registered Trade Marks and the branding of goods, and points out the value of registered marks, both to the manufacturer and buyer. This subject is not sufficiently appreciated in the horticultural world, for, while every business firm is willing to insure premises against fire and other damage, few insure the goodwill of their business by procuring registered trade marks to defend their rights from infringement. All successful business men have recognised the importance of trade marks for their goods, and such trade marks or brands are the cheapest form of insurance that any commercial business can obtain to make certain the manufacturer or trader gets the full return orders that the quality of his goods entitle him to. The goodwill of a business is greatly increased by the position of these marks, and it is to be remembered that goodwill is something for the future and the steady increase of trade.

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* *Les Plantes Alimentaires chez tous les Peuples et a Travers les Ages.* Par D. Bois. Paris: Paul Lechevalier, 12, rue de Tournon. Price 75 francs.

* *Unbranded.* Issued by Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will send a copy free to any of our readers on receiving their address on a post card.

When goods are exported to the Colonies or foreign countries it is very desirable that trade marks be registered in those countries, or the enterprising foreigner may produce and sell in those countries goods very similar to those produced by the original exporter. Registered trade marks are granted in Great Britain by H.M. Patent Office, and the fees are very small compared to the value obtained. The services of an expert are essential to avoid difficulties in obtaining registration and to comply with the regulations of the Patent Office.

NURSERY NOTES.

AN AFTERNOON WITH A POMOLOGIST.

Maidstone is the business headquarters of the old-established firm of Messrs. George Bunyard and Co., but the principal nursery is at Allington, some few miles from the county town, where the famous Apple bearing that name was raised. Messrs. Bunyard and Co. have several other smaller nurseries in Maidstone itself, including one or two quite near to their headquarters, where is inscribed in big gold letters the nature of the business, which is made to include that of pomologists. Webster defines a pomologist as one who is versed in pomology and one who cultivates fruit trees. Plenty of persons may claim to be cultivators of fruits, but few are versed in pomology as a science; indeed, pomologists in this country are as rare nowadays as the old type of florist. The late Mr. George Bunyard had a most extensive knowledge of fruits and fruit culture and could lay full claim to the title, but his son, Mr. Edward A. Bunyard, has made fruit his hobby as well as business, and no one would dispute that he is the foremost pomologist in this country to-day.

He has made his home in the midst of some four hundred acres of fruit trees at Allington, and formed a library of books on fruit and fruit-growing, the equal of which is not to be found elsewhere.

On a most delightful afternoon—that of Friday of last week—it was our pleasure to visit Allington and spend an hour or two in the company of this enthusiastic gentleman, inspecting the fruit quarters and, later, some of the literary treasures which his library contains. Of course, the most serious side of the business is the raising and selling of large quantities of all kinds of fruit trees, but Mr. Bunyard likes to embark on what he facetiously terms "joy rides" from which no profit is derived, but much pleasure. For example, he has collected as many varieties of Gooseberries as he can secure with a view to classifying them and discovering if any of them are synonymous, whilst in another part of the nursery he has planted over two hundred varieties of Pears obtained from all over Europe, the United States of America, and elsewhere, to see whether any of them are of value in this country. Of the Gooseberries, he showed us three very late sorts of merit, namely, Glenton Green, Sandwich Yellow (syn. Cousin's Seedling) and Keen's Seedling, all of which, if planted as cordons on a north wall, would furnish berries of rich quality very late in the season. Mr. Bunyard considers the cordon system a very profitable method of growing this fruit, and where Gooseberry mildew is troublesome the very system of training reduces the damage from this disease to a minimum, for in shortening the branches to obtain the spurs a system of "tipping" results, and the fungus very seldom enters the harder tissue of the older leaves and wood.

Not much of merit has, so far, appeared amongst his Pear collection, but he has obtained what he considers a most valuable variety in Admiral Gervais, which was illustrated in *Gard. Chron.*, January 3, 1925. This Pear is of the Easter Beurré type, but has a much hardier constitution and will fruit well in the open as a bush. The flavour is excellent, and in Mr. Bunyard's opinion this is one of the best new Pears his firm has introduced for a long time. Mr. Bunyard was careful to point out that none of these varieties will be sent out by his firm until its merits have been thoroughly proved.

Our host had some remarks to make on fruit tree stocks, and in his opinion there is no Apple stock superior to Rivers' Broad-leafed Paradise. Jaune de Metz is a valuable stock for dwarfing purposes, and many thousands of cordon and bush Apples are worked on this stock at Maidstone. We were shown several thousand three-year-old cordon trees on this stock and they were bearing splendid crops of such varieties as Egremont Russet, James Grieve, Ellison's Orange and Allington Pippin, whilst one plantation of four to five thousand trees consisted wholly of Cox's Orange Pippin. Some of the stocks are so dwarfing as to be of no value; for example, the one known as praecox. Mr. Bunyard showed us a tree of Cox's Orange Pippin worked on the Nonesuch stock, the fruits of which never colour, while others worked on the true Doucin stock, although they have made smaller trees, always produce fruits of grand colour. Mr. Bunyard is of the opinion that the stock has a great influence on the nature of the fruit.

Of the very large number of Apples cultivated at Allington, Mr. Bunyard places high value on Belle de Boskoop, a variety of the Blenheim Pippin type, which keeps until May, is of excellent dessert quality and retains its acidity late in the season. He informed us that this variety of Apple is grown all over Europe, but is not very well-known in this country. Some trees he pointed out to us were cropping magnificently, and they come into bearing at a much earlier age than trees of Blenheim Pippin.

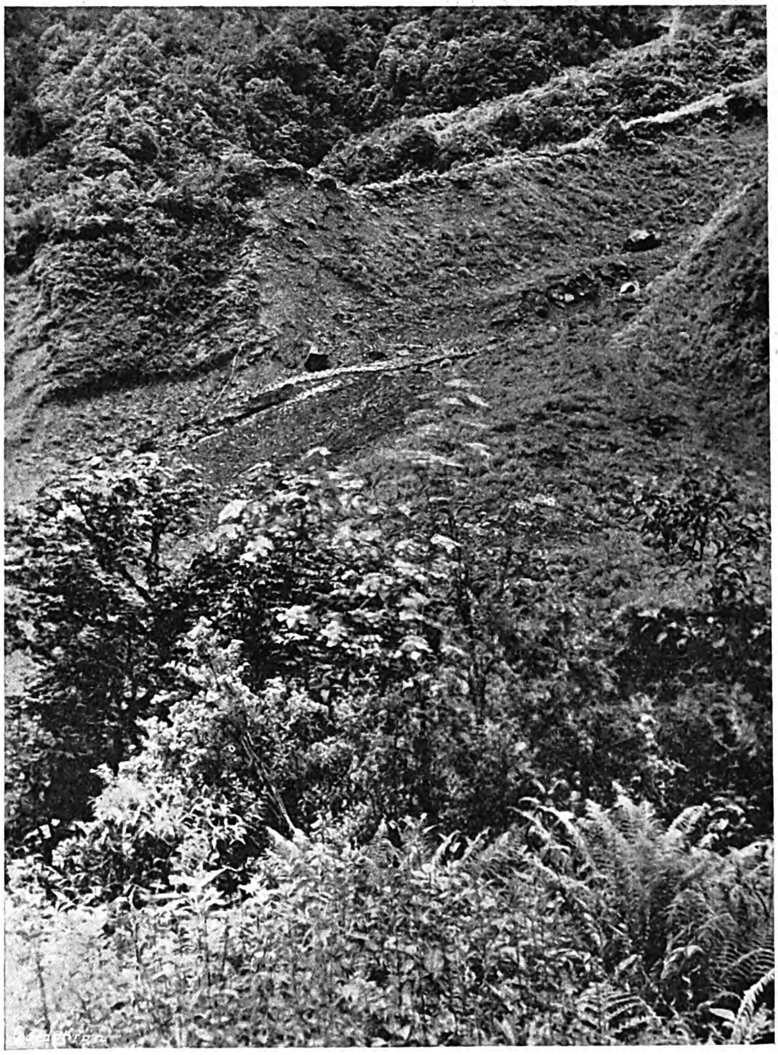

FIG. 99.—RHODODENDRON SP. AND MAGNOLIA GLABRA ON THE SLOPES OF THE DIPHUK LA.

Acers, Deutzias, Hydrangeas, &c., in the foreground. (see p. 210).

A curious feature of this variety is that each Apple has a bud at the base of the fruit stalk, and these buds, with their rosette of leaves, are sufficiently strong to furnish a crop next year. There are a few other Apples that have this characteristic, including Worcester Pearmain. Another favourite Apple of Mr. Bunyard is Clarke's Seedling, which he considers keeps better than Bramley's Seedling, and has excellent cooking qualities. Another Apple he favours is Easter Orange, a late dessert variety raised by the Messrs. Hillier of Winchester, but his favourite of all dessert Apples is Orleans Reinette, and he gives the palm to Golden Noble as a cooker. His selection of four culinary Apples for a succession is either Rev. W. Wilks or Early Victoria, Old Hawthornden, Golden Noble and Dumelow's Seedling.

As we passed through the nursery our guide was constantly pointing out interesting things, only a few of which we had time to jot down. We saw the Chinese early Cherry, fruits of which were exhibited at one of the R.H.S. meetings early in the year. This Cherry has very big foliage and will fruit in a cold house in May. It is a very free cropper, and as it flowers long before other Cherries are out, the inference is that it is self-fertile.

The stocks of stone fruits, such as Plums, Cherries, Peaches, etc., are remarkable healthy, and probably better this season than ever, for whilst nurserymen everywhere have had trouble with weeds, they have no complaints on the score of poor growth, and the wood appears to be ripening well.

Of the Plums, Mr. Bunyard pointed out the new Evesham Wonder, a red form of the yellow Pershore Plum. It makes exceedingly strong growth, some of the maiden trees having shoots eight feet long. The stems have characteristic red colour. A great number of Cherries in standard form are in demand by the Cherry growers in his county, and of these trees the Allington Nursery contains a splendid stock.

The old orchard which visitors to Allington know well—planted some thirty years ago—is well cropped this season. All the trees are trained as large bushes or really on short stems with a series of radiating, cordon-like growths. This method of growing Apples in orchards is far superior to the old half-standard or standard system, as the trees can be attended to much easier and the crop harvested with half the trouble.

Amongst the great wealth of Apples and Pears introduced or re-introduced in recent years, Mr. Bunyard considers the best are Orleans Reinette, Belle de Boskoop and Pitmaston Pineapple Apples; Laxton's Superb, Admiral Gervais and Beurré Six Pears; whilst of the Strawberries he gives the palm to the Old White Pine. In the garden attached to his home, Mr. Bunyard has a number of interesting trees and shrubs, as well as a collection of wild Pear species. His specimen of Pyrus Sargenti is one of the most beautiful in this country, and at the present time is a mass of scarlet fruits. His garden also contains a grand specimen of Pyrus floribunda purpurea, the dark-flowered form which produces claret-coloured fruits, and many other interesting things which would need more space than we can spare to describe.

We may conclude with a few remarks on Mr. Bunyard's library, which contains a representative collection of books published on fruits in all countries. He has the works of many early Italian authors, including Bussato's treatise published in 1590, which is the first work with drawings of the processes of grafting and budding. Another notable book is the treatise of agriculture of Crescentius, who wrote in the thirteenth century, and whose book was one of the earliest of printed works. Mr. Bunyard showed us some of the big volumes, with exquisitely coloured plates, published in France and Italy in the last century by Poiteau and Risso; the faithfulness of the coloured reproductions in these books has never been excelled. The library includes the works of several Russian pomologists, also hundreds of pamphlets and old catalogues, the last including that of the great Pear raiser, Van Mons, printed in 1823, which is probably the only one in this country. Another interesting catalogue is the first published by Messrs. Vilmorin Andrieux et Cie., of Paris. Mr. Bunyard has most of the modern works on fruit and fruit-growing, as well as those of the classic authors who treated on gardening, such as Pliny, Columella and the Greeks, and the commentators upon them, indeed, he has collected—and still collects—everything which might serve to illustrate the history of fruit-cultivation in particular and gardening in general.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 194).

MIDLAND COUNTIES.

BEDFORDSHIRE.—The year 1927 will surely rank as one of the most remarkable for climatic changes. The winter was very mild with very few sharp frosts; the real touch of winter was from April 27 until May 1, 10°, 7°, 9°, 8° and 4° being registered. With all this frost it seemed impossible that any fruit could be left, but no doubt owing to the air being very dry, much of the blossom escaped injury. We have a fine show of Apples of all varieties, except Cox's Orange Pippin, which is only a moderate crop. All other varieties are over the average yield; Bramley's Seedling and Rev. W. Wilks show the result of the frost in a brown marking around the eye; this, fortunately is only skin deep, so should not affect the cooking quality. Scale has not made its appearance up to date. Pears are under the average yield, but we have fruits of most varieties. The trees have been badly attacked by slug worm this year, but aphis has not been so troublesome as usual. Apricots are a poor crop. Peaches and Nectarines are yielding splendidly, with fine foliage, and there is not much die-back or leaf-curl diseases. Figs have also withstood the 1926 severe frosts and have made good growth and promise a fine show of fruit. We have a good average crop of Plums on wall trees, Kirke's being especially good. Victoria and Pond's Seedling are about average in yield, with Gages just over the average. Strawberries Royal Sovereign, The Duke and Admiral have fruited splendidly, but all late varieties failed owing to Red-leaf, not a late fruit being edible. Red and Black Currants have borne extraordinarily remarkable crops and of very fine quality, with no aphis and no run-off, as are usual. Gooseberries have also given an over-crop of fine quality berries. Raspberries are also splendid, Lloyd George being especially fine. The soil is of a sandy nature. *W. G. Warner, Chicksands Priory, Shefford.*

——Red Currants are by far the best of the small fruits, both as regards quantity and quality. Black Currants were badly crippled by the late frosts in many places near here, but they were a fair crop in this garden. The following Apples have failed entirely, although the trees were covered with blossom: Pott's Seedling, Worcester Pearmain, Ribston Pippin and Cox's Orange Pippin, and the crop of Dumelow's Seedling (Wellington) is very thin—although the blossom was profuse. The soil around this locality is most variable, being very sandy in parts, and in others good, sandy loam, a spade or so deep. Underlying these stratas in some parts of this garden there is a liverish-coloured clay. *Charles Turner, Ampthill Park Gardens, Ampthill.*

BUCKINGHAMSHIRE.—All fruit trees produced an abundance of bloom, but the severe frosts during April, and especially on the 26th-27th of that month, destroyed the greater part of it; only trees in very sheltered positions partly escaped. Strawberry beds in exposed positions were practically destroyed. Small fruits are an average yield, and the quality fairly good. Stone fruits in some orchards are almost nil. The soil in this part of Bucks is mostly very heavy and cold, and the natural drainage bad. *W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.*

——The fruit crops are of average quantity, but Strawberries were a very poor crop. Apples, Plums and Cherries are all good. The soil is very loamy, and fruit trees and Roses do remarkably well here if we get plenty of rain; if not, the soil, being very fine and loamy, soon dries up. All fruit trees look very healthy and clean. *George Humphrey, Finefield Gardens, Bath Road, Slough.*

——The fruit crops this year have been very good. Currants and small fruits cropped in abundance. Filberts are not so plentiful this year as usual, but Walnuts are very good. *Albert Adams, Ridgeway, Bledlow Ridge, West Wycombe.*

——The Apple crop is variable; Bramley's Seedling has a poor yield, but Early Victoria Lane's Prince Albert, Lord Derby and Newton Wonder are fair to good, and there is a good yield of Worcester Pearmain, James Grieve, Ellison's Orange, Cox's Orange Pippin and Allington Pippin. Many of the fruits are dropping. Pears are a very light crop. Plums are patchy; Early Rivers is a good crop, and we have a fair number of Czar, Monarch, and Pond's Seedling. Gages are plentiful in some parts and few in others. In some orchards there are good crops of Aylesbury Prune Damson and none in others. This Plum is realising £30 per ton. *Philip Mann, Education Sub-Office, Aylesbury.*

——The fruits crops are, as a whole, very good. Strawberries were especially good; the plants escaped injury by frosts in May. Apples are an average crop, Pears light, and stone fruits plentiful, excepting Peaches and Apricots which were much damaged by the frosts. The soil is light and loamy, with a subsoil of chalk. *William Arthur Bright, Hughenden Manor Gardens, High Wycombe.*

——The fruit crops in general are very good. We have an extra heavy yield of Bramley's Seedling, Newton Wonder and Cox's Orange Pippin; all three sorts have been thinned on bush trees. Pears in the open are a failure; on walls some varieties have a moderate crop, others none. Strawberries were very good, the varieties Royal Sovereign, Leader and Givon's Prolific gave heavy crops, and the plants have vigorous foliage, those one-year-old being much superior in growth and fruit to those two years old. All small fruits were extra good. The soil is a gravelly loam on chalk, and the gardens are sheltered from wind. *Wm. Camm, Cliveden Gardens, Taplow.*

(*To be continued*).

FRUIT REGISTER.

THE CAMBRIDGE GAGE.

THIS Gage is probably a seedling from the well-known Green Gage, and is largely grown around Cambridge, being usually raised from suckers. There are certainly many different seedlings grown, but the variety I have selected is the same as grown at Merton for pollenation experiments, and, in my opinion, is one which deserves wide cultivation.

The flavour of the fruit is extremely good, whether quite equal to the old Green Gage or not there are varying opinions, but it is certainly very close. Its great advantage over its parent is that it is partly self-fertile, so that a single tree can be planted, the old Green Gage requiring another variety to pollenate it. Beyond this, is its great value in cross-pollenating other varieties, in which respect it is of great value. According to Mr. Crane's exhaustive experiments at Merton, it secures a good crop when its pollen is used for the following varieties:—Allgrove's Superb, Blue Rock, Coe's Golden Drop, Coe's Violet, Kirke's Blue, Late Orange, President and River's Early.

Those who fail with the old Green Gage might do well to try this variety, which is so near to it in flavour and superior in many other respects. *E. A. Bunyard.*

VEGETABLE GARDEN.

'SEED' POTATOS.

DANGER OF VIRUS DISEASES.

IT has long been known that a better crop of Potatos may be obtained by the use of Scotch "seed." This fact has become still more pronounced during recent years. It has been commonly attributed to the fact that Scotch "seed" is usually more immature than English "seed." There may be some advantages in the use of so-called immature "seed," but the chemical composition has been studied by biochemists who have found no significant difference between the composition of mature and immature seed Potatos after they have been stored for two or three months. They conclude that maturation is completed during storage.*

There is a far more important reason for the superiority of Scotch "seed," namely, its greater freedom from virus diseases. The writer knows of a case when once-grown seed of the variety Great Scot was grown as a field crop to test its yield against fresh Scotch "seed" of the same variety. Little difference was found with this variety, but a great difference was found when a similar trial was made with other varieties, and still greater was the difference between Scotch "seed" and seed that had been twice-grown. It is a significant fact that the variety Great Scot is, perhaps, the most resistant we have to the two virus diseases, Mosaic and Leaf Roll. The gradual degeneration that is found on repeatedly saving "seed" from the same lot of Potatos is due to the increased infection by these virus diseases.

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* Appleman and Miller. *Journ. Agr. Res.* V. 33, p. 560.

Virus diseases are caused by some infilterable organism, soil toxine or profound physiological disturbance, the nature of which is not yet known. In Potatos, two of these diseases are extremely prevalent in England, viz., Leaf Roll and Mosaic. Nearly every Potato crop is more or less infected, and the diseases threaten to become a most serious menace. Garden and allotment crops usually suffer more than field crops.

An infected crop is fairly easy to detect. The plants present an irregular appearance, many of them being small and unthrifty. Those with Leaf Roll have their leaves rolled up at the edges showing the under surfaces, which are rather light and sometimes appear silvery. The leaves seem dry and harsh to the touch.

Mosaic disease causes a very faint mottling of the leaves, usually more noticeable after rain. The leaves may be smaller than normal and are usually wrinkled. In extreme cases there is no proper growth, only a few dwarf, curled shoots.

When the tubers are lifted they show no obvious signs of disease, but are mostly small in size, and the crop may be reduced to a third or half its normal weight.

It is known that these diseases are spread by aphides and other leaf-sucking insects which transfer the virus from one plant to another. A healthy plant may also be infected by rubbing it with any part of a diseased plant. The greater prevalence of virus diseases in gardens is explained by the fact that leaf-sucking insects are more numerous than in fields.

The Scotch Potato crops do not suffer so severely from virus diseases because of the cooler summers. Temperature is an important factor in the distribution of aphides, and in Scotland, where it is cooler, they are not so prevalent. They become more prevalent as one goes farther south and it is found that the extent of infection with virus diseases is greatest in the south of England. Further north than Scotland, in Sweden, varieties of Potato, such as Magnum Bonum, which succumbed to virus diseases ("degenerated") in this country are still grown successfully.

It is important to realise that, although Potatos come from the tropics, most species naturally grow at a height of 6,000 to 14,000 feet in Peru, Bolivia and Venezuela. They are therefore, in reality, a cool season crop, the normal conditions of growth being intense light, a mean temperature of about 60°F. at all times of the year, and a very heavy fall of dew at night.

The cooler climate of Scotland in summer may be more nearly suited to the natural requirements of the Potato, the longer day in Scotland compensating for the greater intensity of light in the natural habitat. The Potato might, therefore, be expected to be more resistant to diseases under these conditions.

No variety of Potato has yet been introduced that is entirely resistant to both Leaf Roll and Mosaic, and it is therefore essential to check the spread of the disease so far as possible. For this every care should be taken to avoid the use of infected "seed." Any tubers taken from a plot where there are any diseased plants are liable to be infected. Growers who save their own "seed" should make sure that their crops have no infected plants before the haulms are down. If any plants in the crop appear to have virus diseases, it will be cheaper in the long run to buy Scotch "seed" than to risk raising a crop with most of the plants infected, and giving a very low yield. It should be remembered that an apparently healthy plant may have been infected; this has been proved by experiment.*

Another important precaution against the spread of these diseases is to make certain that every single Potato in a crop is lifted, and that no "rogues" are left to infect the next season's crop. Some people recommend the cutting off of infected tops so soon as they appear, but this may only mean that infected tubers are left in the ground. Another check to the diseases is to spray for aphides if they are observed. The best preventative is, however, to use good "seed." *C. O'Connor, B.Sc., (Horticulture.)*

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* Stewart. F., N.Y. Agr. Sta. *Bull.* 422. 1916.

HOME CORRESPONDENCE.

The Spraying of Potatos.—I am engaged in lifting maincrop Potatos. The date is early, but there is no advantage in allowing the crop to remain in the soil longer as the plants are badly attacked by late blight (Phytophthora infestans). Certain varieties reveal a higher degree of susceptibility than others, but all have fallen victims to the disease to such an extent as to render them quite unfit for storage. The condition of my own crop is typical of Potatos generally in south Wales. There is a difference, however, in the approach to the result. I have sprayed my crop twice with Burgundy mixture, whereas few, if any, of my neighbours have sprayed at all. Naturally, I am perplexed and struggling with the question as to whether it is worth the while to spray Potatos in a wet season. The protective film is certain to be washed off the haulm, leaving a clear field for the activities of the fungus. If one were to renew the film as often as it is broken the cost would be prohibitive. This is not my first disappointing experience in the matter of spraying Potatos in a wet season, and I have almost decided not to repeat the process. I should indicate that the Burgundy mixture was applied through a very good Holder-Harriden Knapsack Sprayer by a painstaking workman, and all the aerial parts of the plants were treated. For the purpose of testing the advantage of cutting off diseased haulm, I isolated six rows of maincrop Potatos. These were carefully watched and when it was obvious that the leaves could not function usefully, the haulm of three rows was cut down to within nine inches of the ground, and on three rows it was allowed to remain. There is a marked difference in the condition of the tubers at the present time. Beneath the cut stems they are sound, so far as the eye can tell, but disease lesions are numerous on the tubers which have carried haulm until lifting time. This note is written from the county of Glamorgan, in which the average annual rainfall is between forty and forty-five inches. *Geo. H. Copley, N.D.H.*

Treatment of Golf Greens.—My attention has been drawn to an article on the above subject which appeared in *The Gardeners' Chronicle* on July 23. The general strain of that article is completely subversive of much of the accepted opinion on "The treatment of Golf Greens." Coming, as it does, from a paper of such acknowledged standing as *The Gardeners' Chronicle*, this article is bound to carry considerable weight, and I therefore venture to ask if you have the support in these statements of any recognised authority on grasses or manures, or chemical action in the soil. The statement that fine grasses, suitable for golf greens, thrive best in an acid soil, is a most surprising one. In all my experience of farming and gardening, I have never found anything to thrive in an acid soil, except Fog grass or moss, or such weeds as Buttercup, Daisy, etc. The statement that "sulphate of ammonia and ammonium phosphate augment soil acidity," has, until recently, been pretty generally accepted, but the opinion of the best scientific authorities to-day is that these manures do not augment soil acidity. Practically all sandy soils are super-acid, and it has constantly been the aim of those dealing with such soils, to counteract this acidity by the application of lime, the general experience being that where lime is non-existent, or present only in a small degree, and where there is a lack of the three principal plant foods, Fog or moss so asserts itself that the fine natural grasses are quickly killed out. As the outcome of a general desire for more exact knowledge as to golf green culture, a Scientific Advisory Committee for the United Kingdom was instituted about two years ago, this Committee consisting of some six or eight of the leading scientific authorities on soils and manures in the United Kingdom. This Committee made up four separate formulas for manures for golf greens, and four separate formulas for manures for fairways and sea-side courses, and an equal number of formulas for greens and fairways for inland courses, and these manures are now being tested in various districts. In every case this Committee avoided sulphate of ammonia and superphosphate, probably because these had hitherto been suspected of acidity, and have recommended instead that the nitrogen should be in the form of dried blood or fish manure, and the phosphate in the form of steamed bone-flour or bone-meal. Ammonium phosphate, by the way, is not a commercial term, but, what is known chemically as ammonium phosphate would be supplied in a mixture of sulphate of ammonia and superphosphate. With regard to your statement about the beneficial results of applications of sulphate of ammonia alone, it is a matter of the most elementary knowledge that sulphate of ammonia contains only one element of plant food, and that of a very stimulating or forcing nature. The three chief elements of plant food are—nitrogen, as supplied in sulphate of ammonia, nitrate of soda, dried blood, etc.; phosphorus, as supplied by superphosphate, bone-meal, bone-flour, etc.; and potash, as supplied by kainit, sulphate of potash, etc. A chain is only as strong as its weakest link. Sulphate of ammonia will produce grass in abundance so long as there is a supply of phosphates in the soil, but to supply sulphate of ammonia alone is analagous to feeding a man on champagne. There must be the three constituents present to give a properly balanced plant food. It is no doubt in the interest of certain manufacturers to support an extensive use of sulphate of ammonia, but those who persist in this method of treatment for any length of time, unless other plant foods are also being supplied, will find undoubtedly that the last state of their greens is worse than the first. If this proposition were put to any shrewd farmer, he would at once say you are simply purging your soil. It is the kind of thing the farmer might possibly do when leaving his farm, and wanting to take every ounce of goodness out of the soil. The results, mentioned in your article, which have been obtained at Keighley Golf Course and at Stoke Poges, can undoubtedly be got anywhere by applying slight dressings of sulphate of ammonia. The effect will be seen almost immediately in a greater growth of grass of a dark green colour, but that is only a temporary effect. The nitrogen quickly expends itself, or is washed out of the soil, and the soil is the poorer for the effort it has made. With regard to the reduction of weeds, all that need be said is that if you starve a child, or an animal, it will produce diseases; if you starve the soil, it will produce weeds such as Buttercup, Daisy, moss, etc., while if you feed the soil, there will be no room for weeds to grow. The farmer kills out weeds in his soil by producing heavy crops of grain or Turnips, or wild White Clover. All that is advocated in your article seems to have emanated from America. Americans look for quick results, and these they will get from sulphate of ammonia, but the fine green swards on the English college lawns were not made by hasty impulse; and before adopting any new "discovery," I hope the caretakers of these lawns will await conclusive proof of its real value. I am not writing this in support of destructive criticism. I have been closely associated for many years with golf green committee work, and would gladly welcome anything new or of proved value, but we must always guard against anything that may have merely the self-interest of the producer behind it. *W. L. Paterson, Aberdeen.* [We shall deal with this subject again in due course.—Eds.]

Growth of Melons under Vitaglass.—When I recently visited the gardens at Stagshaw House, Corbridge-on-Tyne, Northumberland, the residence of J. C. Straker, Esq., I was shown the effect that vitaglass has on plant growth. A Melon house there has half the roof glazed with ordinary glass and the other half with vitaglass. When I looked in this house I thought something must be wrong with the plants, for on some of them the fruits were half grown, while on the others they had only just set. Mr. Hay, the gardener, informed me that they were all planted on the same day, were all strong, healthy plants, and that the difference was due to one half being grown under vitaglass and the other under ordinary glass. The results I saw go far to prove that vitaglass has a great effect on plant growth. *W. McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.*

SOCIETIES.

SANDY HORTICULTURAL.

The fifty-fourth show of this society was held at Sandy Place (by kind permission of Mrs. Graves) on Thursday, August 25. The entries constituted a record for this Society, and, considering the season, the exhibits of flowers, fruit and vegetables were of a very high standard. Despite the heavy rain that fell during the morning of the show, which reduced the ground to a quagmire, the attendance was, on the whole, very good, and the sun shone during the afternoon; by 5 o'clock over 11,000 visitors had passed through the gates.

Groups of hardy flowers and Roses were tastefully displayed in one large tent. In the class for a group of hardy cut flowers arranged for effect on a space twenty feet by eight feet, Mr. Forsyth, Pulteridge Park, was successful, and Messrs. Chillery, Fenstanton, were placed second. For a collection of Roses arranged on tabling fifteen feet by four feet, Messrs. Harkness and Co. were placed first for a grand display of choice, clean flowers of such varieties as Lady Inchiquin, Betty Uprichard, K. of K., Madame Butterfly, Los Angeles and Orange King. The same exhibitors were first in the class for forty-eight cut Roses. Messrs. J. Cheal and Sons won three first prizes for collections of Dahlias, which are very popular in the Sandy district. Messrs. Daniels Bros. made a fine display with Gladioli and Phloxes, while Messrs. W. and J. Brown, Peterborough, had a fine exhibit of Roses, and Roses were also shown well by Messrs. Laxton Bros.

For a collection of hardy fruits in ten varieties, the Earl of Sandwich (gr. Mr. W. Prowting) was an easy first prize winner; second, J. O. Fare, Esq. (gr. Mr. A. Gillings); while Mrs. Carl Holmes (gr. Mr. W. Penton), was third.

For a collection of ripe dessert fruits, the Earl of Sandwich was again first, showing good Nectarines, Peaches and Melon Universal. J. O. Fare, Esq., second. The Earl of Sandwich also excelled in the classes for six Peaches, six Nectarines, green and scarlet-fleshed Melons and dessert Plums. Other notable prize-winners were Lady Juliet Duff, Kingston Hill, whose exhibit of black Grapes was very good, and Mrs. Carl Holmes, who showed the best Muscat Grapes.

Vegetables are always of a high standard at this show; for a collection of nine distinct kinds, Dr. C. J. Welch, Mogerhanger (gr. Mr. W. R. Pettifer), was an easy winner. This exhibitor also won several prizes in the single dish class for vegetables, other prize-winners being the Earl of Sandwich, Mrs. Carl Holmes and W. Robinson, Esq., Marford. The last-named was placed first for a collection of six varieties of vegetables and also for a collection of Potatos.

In the cottagers' section there were 150 more entries than in the previous year, the produce being of exceptional merit and well displayed, the chief prize-winner being Mr. Robinson, Great Marford.

Table decorations were accommodated in one large tent. For a table decorated with Roses, Mrs. Harkness, Hitchin, who was first, used Betty Uprichard effectively. The best table decorated with Sweet Peas was arranged by Mrs. G. Myers, Bedford, and the best decorated with Carnations by Mrs. D. R. Moore, Kempston.

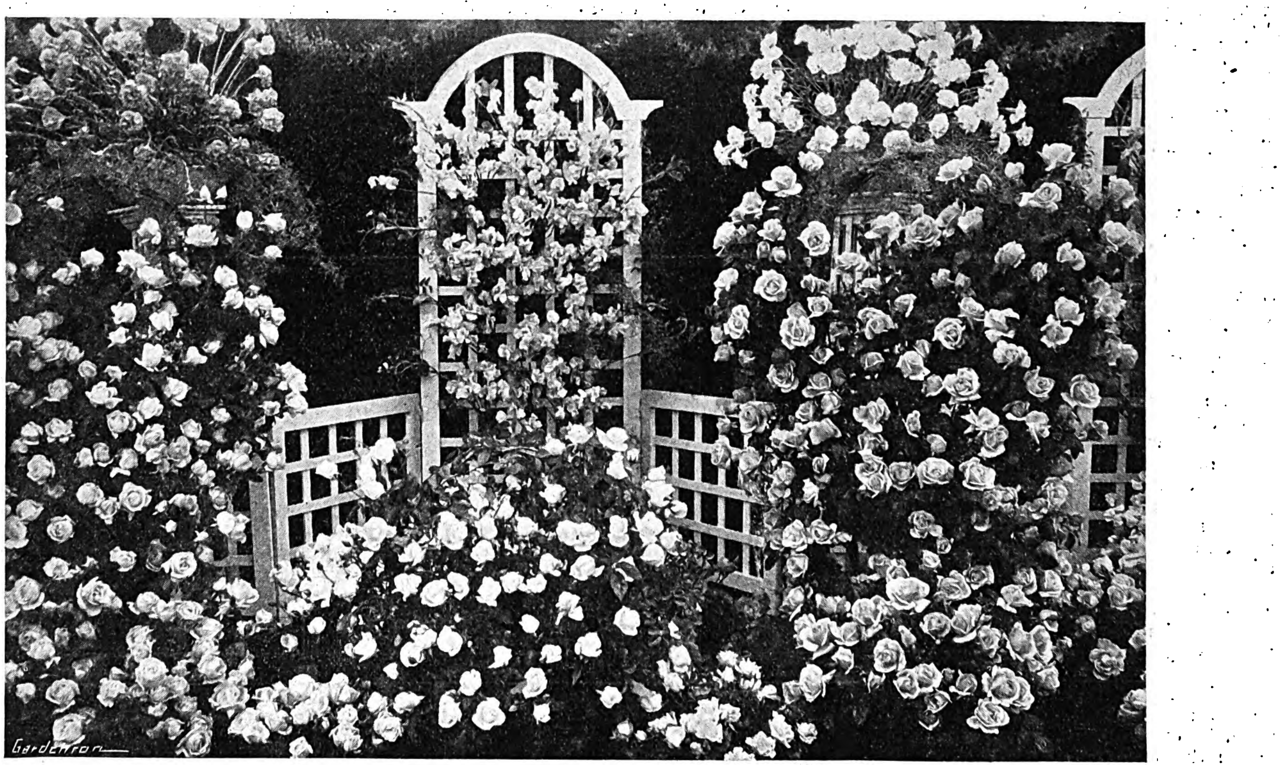

FIG. 100.—SOUTHPORT SHOW: CENTRAL PORTION OF MESSRS. ALEX. DICKSON AND SONS, GROUP OF ROSES. (see p. 198).

BRITISH CARNATION.

This important floricultural society held its thirty-fourth show at Southport in conjunction with the Southport Floral Fete, on August 24, 25 and 26. The exhibition was excellent, the competition good and the flowers of capital quality. Many of the important people in the Carnation world were present, including Mr. A. T. Mason, Mr. W. H. Page, Mr. W. E. Wallace, Mr. C. Engelmann, Mr. K. Luxford, Mr. Willis, Mr. P. F. Bunyard (Secretary), Mr. C. Wall and Mr. J. S. Brunton.

The George Monro Silver-Gilt Cup, offered for the best seven varieties of Carnations, twenty-five blooms of each, shown in seven vases, was awarded to Messrs. C. Engelmann, Ltd., Saffron Walden for lovely blooms of Blanche, Orange Sunstar, Red Laddie, Saffron, Master Michael Stoop, Laddie and Sheila Green. This was a fine set, and if only a good competition could be obtained the class would be a fine one.

The Brunton Challenge Cup for three vases, distinct, was won by Mr. Charles Wall, Bath, with Bath Beauty, Glorious and Dixie; Messrs. C. Engelmann second, with Rouge, Dainty and Improved Circe.

A glorious vase of lovely blooms of Laddie won for Messrs. C. Engelmann, Ltd., the American Challenge Cup offered for the best fifty flowers of this variety, but here again the Saffron Walden firm had a walk-over.

The best-scented Carnation—the winner of the *Daily Mail* Cup—was the crimson variety Mrs. A. J. Cobb, shown by Mr. A. F. Dutton, Iver.

Messrs. C. Engelmann, Ltd., secured the George Monro Silver Cup for twenty-five crimson flowers with good blooms of Topsy, and obtained first prize for fifty flowers in three or more varieties, with examples of Topsy, Maine, Sunshine, Laddie, Red Laddie, Benora Rouge, Duchess of York, Hebe and White Pearl; second, Mr. T. Shaw, Calgarth Park, Windermere; third, Mr. H. Hunter, New Lane, Crossens, Southport.

Mr. C. Wall led for three vases of three varieties of distinct colouring with Laddie, Topsy and Mrs. C. W. Ward; Messrs. C. Engelmann, Ltd., second, with Improved Ward, Laddie and Red Laddie.

In the colour classes, Messrs. C. Engelmann, Ltd., led for a white variety with White Pearl; for a medium pink sort with Hebe; for the best red variety with Red Laddie; and for any other colour, with the scarlet-flaked Duchess of York. Messrs. Allwood Bros. scored for a deep pink variety with Master Michael Stoop. Mr. H. T. Mann had the best light pink variety in the fine Magnum. Mr. C. Wall led in the crimson class with Topsy, the other three competitors showing the same variety.

Mr. T. Shaw had the best vase of Messrs. Stuart Low and Co.'s novelties, and Mr. B. Feeny, Blundellsands, the best vases of twenty-five blooms, mixed colours.

In the colour classes, five blooms of a variety, Mr. R. Harpin, Cranbrook, Blundellsands, led for a medium pink sort with Eileen Low; for a red variety with Tarzan; for a crimson sort with Topsy; for any other colour, with Master Michael Stoop; Mr. T. W. Simpson, Ashton-on-Ribble, for a white sort, with White Pearl; Mr. F. Hathaway, Baldersby Park Gardens, for a deep pink sort.

Mr. Simpson won the Lord Howard de Walden Cup for the best dozen plants of perpetual-flowering Carnations with a fair set. Mr. Harker led for six plants.

The Cory Cup offered for a decorative arrangement of Carnations was won by Mr. J. F. Hanmer, Pinewood Towers, Conway, with a pretty arrangement of good blooms; second, Mr. J. Hathaway.

The Covent Garden Cup, offered for the best three vases, two baskets, three sprays and three button-holes of Carnation blooms, was won by Messrs. Arlington, Hull, with a very bright collection; equal second, Messrs. W. J. Garner and Son and Messrs. W. Artindale and Son.

Messrs. C. Engelmann, Ltd., led for a pair of packed boxes of Carnation blooms with handsome flowers of Laddie and Topsy; second, Mr. W. H. Page, Hampton, who sent Saffron and W. H. Page.

Mr. E. Walker, Radcliffe-on-Trent; Mr. F. W. Simpson, Ashton-on-Ribble; and Mr. R. Harpin and Mr. W. B. Feeny were very successful in many other classes.

Mrs. C. Engelmann, obtained first prize for a dinner table decoration of Carnations, using the variety named Coral Glow; second, Messrs. Arlington, Hull, with crimson and blush flowers; third, Miss C. Brunton, Burnley, with blush-pink flowers.

HIGHLAND HORTICULTURAL.

A very meritorious exhibition was held at Inverness by the members of this society. Mrs. Mackintosh, wife of The Mackintosh of Mackintosh, gave the show a happy send off in a delightful little speech in which she described flowers as one of the joys of her life.

There were some remarkably fine entries in the pot plant classes. The Hon. Mrs. Smythe, Ness Castle, Inverness (gr. Mr. W. Ross), led for six foliage plants, six plants in bloom, and for Carnations and Coleus. From the gardens at Muirtown (gr. Mr. Peter Macdonald), came the best Ferns, Begonias (single and double), Fuchsias and Pelargoniums.

Cut Flowers provided the most attractive division in the show. From Brodie Castle (gr. Mr. J. Annand), came the best hardy herbaceous cut flowers, Sweet Peas, six bunches of annuals, and Collerette Dahlias. The Earl of Moray, Darnaway Castle (gr. Mr. A. Dow), ran the Brodie Sweet Pea exhibits very close. From Darnaway Castle came the best six trusses of cluster Roses and the best twelve Antirrhinums. Milnfield (gr. Mr. H. Fraser) sent the best Cactus Dahlias, and Muirtown (gr. Mr. P. Macdonald) showed the best Asters. Mr. J. Macqueen, Laggan Gardens, won premier honours for twelve Roses, Violas, Pansies and French, striped Marigolds. From the far-away Island of Scalpay, Sir H. Bell led finely for hand bouquets and border Carnations or Picotees. Mr. J. H. Smith, Summerfield, staged greatly admired Roses.

In the fruit classes, Mr. W. Ross, Ness Castle, showed the best black and white Grapes. Those from Eileanach were also very good, but they lacked the finish and bloom of the Ness Castle exhibits. The Earl of Moray had the best collection of fruits, the best Black Currants, Red Currants, Raspberries and Loganberries. For Nectarines, dessert Apples, Pears and Strawberries the chief honours went to Muirtown.

A fine display was made in the vegetable section, but Potatos did not come up to the usual standard one is accustomed to find here. The "blue riband" here was awarded for the best display of vegetables—twelve dishes, distinct—and Laggan (gr. Mr. James Macqueen), worthily gained the premier honour with finely-grown produce. From the same gardens also came the best Celery, Onions and Parsley. The Earl of Moray lead for Peas, French Beans, Parsnips and Beetroots with capital specimens.

Some very fine exhibits were shown by amateurs; the leading prize, a Silver Cup presented by Lady Invernairn, was won by Mr. W. J. Shaw, Ardchattan, Inverness, for a collection of eight dishes of vegetables. This being the third occasion on which Mr. Shaw has won the Invernairn trophy, it now becomes his own property.

CRANLEIGH HORTICULTURAL.

In the district of West Surrey, where every village is surrounded by mansions, where every cottager has his garden, and flower shows are numerous, it may seem somewhat invidious to refer to any one village in particular, but it so happened that the writer chanced to visit Cranleigh on Wednesday, August 17, on one of the few fine days in the month, when the flower show was being held.

In point of numbers, athough the exhibits exceeded those of last year and totalled 667, this was not a record, but the quality of the produce was of a very high standard. In all classes vegetables were good, and fine Potatos were much in evidence.

It was, however, in the non-competitive section that an exhibit from Sir Frederick Hall, M.P., Grafham Grange, near Bramley, lent distinction to the entire show. This exhibit occupied a space of fifty feet in length by three feet in width, and contained ninety-one varieties of vegetables, some of them in several varieties, notably eighteen varieties of Potatos, ten of Vegetable Marrows, eight of ornamental Gourds, and so on. There were also thirty-nine varieties of fruits, including eleven of Apples, ten of Plums, four of Grapes and three of Peaches. Indeed, this group was noteworthy for the excellence of the Grapes, Peaches and Melons, and it included a Pineapple and Monstera deliciosa—rare fruits in a village show. These varied products were associated with many choice and beautiful flowers, among which were Bougainvilleas and Oleanders, with groups of other more familiar favourites, such as Gladioli, Nemesias, Scabious, Statice, Delphiniums, Lupins and Rudbeckias. This fine collection would have done credit to a more pretentious exhibtion, and it reflected great credit upon Mr. G. E. Saunders, the gardener. Before Sir Frederick Hall bought Grafham Grange, some eight years ago, Mr. Saunders was his gardener at Streatham. *W. F. S.*

DUNDEE HORTICULTURAL.

August 25, 26 and 27.—In brilliant sunshine, Lady Lloyd, wife of the Governor of Egypt, gave a happy send off to the annual exhibition of the Dundee Horticultural Association, held on Magdalen Green, Dundee on the above dates. The entries numbered 1,391, a decrease of about seventy compared with last year—the centenary year; the show was visited by 26,000 people, the gate receipts amounting to £1,071, an increase over the 1925 show of £44. The exhibition was altogether remarkable considering the variable and unreliable season experienced, and fully justified the claim made by Lady Lloyd that Dundee had now reached the proud position of holding one of the three most important annual flower shows in the United Kingdom.

Pot Plants.—A very high standard of quality was reached in this division, the blue riband in which was the Corporation Challenge Cup, open to professionals only, and awarded for the best four plants, foliage and/or flowering, distinct. The trophy was won by Miss Gibson, Invertay, Dundee (gr. Mr. George Reid), for plants of Statice, Clerodendron, Ixora and Oncidium. The judges added to the award a Cultural Certificate for the Statice. But the success of the Invertay exhibits did not end here, for Mr. Reid also carried off leading honours for exotic Ferns, Pelargoniums, British Ferns, Palms and Alpines. Mr. W. D. Grieve, Hazelwood, Gardens, Broughty Ferry, had a close entry for the Corporation Cup. Single and double Begonias in flower, distinct, made a fine display. The most successful exhibitor was Mr. T. E. Brown, Balcairn Gardens, and he secured the leading place for Cordylines. Mr. Grieve excelled in the class for foliage plants and Liliums with finely-grown and much admired entries. From Lismore (gr. Mr. J. Dick), came the best three Coleus, while honourable places in the prize list were also taken by Colonel Tyrie, St. Helens, Dundee (gr. Mr. T. Dobbin); Archibald Rettie, Esq., Seafield Lodge (gr. Mr. J. Margach); Douglas Nairn, Esq., Elmslea (gr. Mr. James Smart); Mr. Charles Bricknal, gardener, Fernbrae Nursing Home; George Bonar, Esq., The Bughties, Broughty Ferry (gr. Mr. Martin Taylor); Lord Kinnaird, Rossie Priory (gr. Mr. J. McGregor); and T. H. H. Walker, Esq., Tighnamuirn (gr. Mr. William Peebles).

Cut Flowers.—The display of blooms in the marquees devoted to this division proved a source of great pleasure to the large number of visitors. The herbaceous and hardy annual classes provided the keenest competition, the judges describing the former exhibits as the finest ever seen in Dundee, not merely from a quality point of view, but also from effective and artistic arrangements. In the Sweet Pea classes the entries were not numerous. The Challenge Trophy presented by Mr. D. J. Macdonald, of Tighanard, Broughty Ferry, for the best display of Sweet Peas on a table ten feet by five feet by two feet high, was won by Mr. George Reid, Rouken Vale Gardens, Downfield. First prizes for a bowl of Sweet Peas, hand bouquet and basket of Roses also went to Rouken Vale. From the gardens of Binrock, Dundee, Mr. James Beats showed exquisite bouquets of Sweet Peas and baskets of cut flowers. In the class for annuals, open to all, the leading honours also went to Binrock, and for twelve vases of herbaceous flowers.

Some very fine exhibits were also shown by Mr. George Scott, Ochterlony Gardens, Guthrie, including Sweet Peas, Roses and cut flowers. Gladioli were finely shown by Mr. J. M. Robertson, Leuchars, the decorative effect and the superb quality of the individual spikes being greatly admired. First prizes for summer-flowering Chrysanthemums and Dahlias were won by Mr. W. Hunter, Delvine Gardens, while Mr. J. Dick, Lismore, was awarded leading places for border Carnations and Collerette Dahlias. Mr. C. Bricknal, gardener, Fernbrae Nursing Home, led finely in the class for Asters followed closely by those from Ochterlony.

Fruit.—Competition in the fruit classes was exceedingly keen. In the section open to professional gardeners some fine Grapes were shown. Colonel Tyrie, St. Helens (gr. Mr. T. Dobbin), was successful in winning first prizes for the best four bunches of Grapes of three varieties, one bunch of Lady Downes variety, one bunch for bloom, and he had the best bunch of a variety other than those scheduled. Lord Kinnaird, Rossie Priory (gr. Mr. J. McGregor), was also a prominent prizewinner in the Grape classes, and prizes were also won by Douglas Nairn, Esq., A. Buist, Esq., Taypark (gr. Mr. J. A. Nicoll); and Sir William Henderson, West Park (gr. Mr. Alex. Cowieson). The best Peaches were from Rossie Priory Gardens, while A. S. Henderson, Esq., Seathwood (gr. Mr. James Henderson), secured the leading award for Nectarines. There was keen competition for the best collection of six dishes of hardy fruits, and the entry from H. Lyall, Esq., Old Montrose (gr. Mr. R. Duncan), was successful. This exhibit included perfectly formed and exceptionally fine Gooseberries, Raspberries, Plums, Cherries, Apples and Pears. Mr. Lyall was easily the leader in the fruit classes, but when it came to the section for Apples he had no compeer. He led in the class for twelve distinct varieties grown in the open, showing three fruits of each, and won seven first prizes in the remaining fourteen classes for different varieties of Apples; and this fine career of success he repeated in the classes for Pears and Plums, but Lord Kinnaird proved a serious rival for Plums, having some exceedingly fine entries.

Among the other successful exhibitors in the fruit classes were A. Rettie, Esq., Seafield Lodge (gr. Mr. J. Margach); Mr. Walker, Tighnamuirn (gr. Mr. W. Peebles); A. S. Hen-

DERSON, Esq., Seathwood (gr. Mr. James Henderson); D. H. W. RITCHIE, Esq., Dura, Cupar (gr. Mr. D. Pullar); GEORGE BONAR, Esq., The Bughties (gr. Mr. Martin Taylor); Mr. CHARLES BRICKNALL, Fernbrae Nursing Home; Mr. N. HORSBURGH LOW, Roselea, East Newport; Mr. H. TAIT, Errol, and Mr. W. GOODALL, Errol.

VEGETABLES.—For a collection of vegetables, twelve kinds, distinct, on a table not exceeding seven feet by four feet, Mr. PETER KERR, Braefoot, Carnoustie, had a capital win. Mr. JOSEPH DICK, Lismore, carried off Colonel Tyrie's prize offered for the best collection of vegetables, six distinct kinds, comprising three Cauliflowers, four Celery, six Leeks, six Onions, six Carrots and six Beets. Mr. DICK also led for Leeks, Parsnips and Celery with finely-grown specimens. Potatos made a fine show, and here Mr. DAVID DALRYMPLE, Ratheluan, Fife, was very successful, as he was also for Onions. Mr. W. HUNTER won the leading places for Beans and Cauliflowers, while H. LYALL, Esq., who did so well in the fruit classes, showed the best Turnips. First prizes were also gained in this division by Mr. W. BOWSE, Craiglea; Mr. G. SCOTT, Ochterlony; Mr. W. PHILIP, Forfar; Mr. A. P. MOIR, Tayview, Broughty Ferry, and Mr. D. PULLAR, Dura, Cupra.

There was not a great display in the nurserymen's classes so far as numbers went but, as is always the case with nurserymen, the quality was first-class. Mr. W. FERGUSON, Dunfermline, led finely for twelve Roses, one variety, and for six vases of Roses, distinct, while Messrs. D. AND W. CROLL, Dundee, had the finest twenty-four Roses, H.P. or H.T., distinct.

Some fine produce was shown by amateurs, and all concerned had great reason to be proud of the exhibits their care and devotion had brought to such perfection. The Corporation Challenge Cup offered for the best four plants, two in foliage and two in flower, distinct, was awarded to Mr. R. MOORE, 17, Cleghorn Street, Dundee, for remarkably well-grown plants in excellent condition. Mr. MOORE also won *The Gardeners' Chronicle* Medal. In the cut flower classes, Mr. W. H. SCOTT, Moncrieff Terrace, Dundee, was the most prominent winner, taking leading places for Dahlias, Carnations, fancy and show Pansies and a bowl of Carnations. The most successful exhibitors in the fruit classes were Mr. J. PEARSON, Castle Terrace, Newport, and Mr. N. TAIT, Ardenlea, Errol. Mr. PETER DONALDSON, Station Cottages, Blackford, earned warm congratulations for his wide range of entries, including two collections of vegetables which gained first prizes, and he also led for Tomatos, Cucumbers, Shallots, Marrows, Beets, Kidney Beans and Parsley.

NON-COMPETITIVE EXHIBITS.

As is usual at Dundee, the trade exhibits by nurserymen and florists added not a little to the great success of the show. Large Gold Medals were awarded to Messrs. THYNE AND SON, Messrs. D. AND W. CROLL, Messrs. HARLEY AND SONS, Messrs. W. P. LAIRD AND SINCLAIR, LTD., Messrs. STORRIE AND STORRIE, Messrs. ALLWOOD BROS., Messrs. ROBERT STEWART AND SONS and Messrs. C. ENGELMANN, LTD.

Messrs. GEORGE PATON AND SON and Messrs. THOMAS MURRAY AND SON were awarded Gold Medals, and the ST. FORT ARTIFICIAL STONE Co. and Mr. WILLIAM CLARK, horticultural builders, Silver Medals.

PAISLEY FLORISTS'.

THE autumn show of the Paisley Florists' Society was held on September 1 and 2 for the first time in the more commodious premises of the Clark Town Hall. The change attracted additional entries and non-competitive exhibits were more numerous. Excluding the industrial section, the schedule contained 116 classes.

The open classes were poorly represented, a contributory influence being the policy of the Society in substituting Gold and Silver Medal Certificates for prize money. Mr. WILLIAM FERGUSON, Dunfermline, was awarded the first prize for thirty-six blooms of Roses and six vases of decorative Roses. Mr. JAMES LAIDLER led in the class for twelve spikes of Gladioli, and Mr. R. MACAUSLAN occupied a similar position in the class for six vases of Pompon Dahlias.

Pot plants and cut flowers were shown extensively in the competitive section, but the quality compared somewhat unfavourably with that of previous years, except in the Chrysanthemum exhibits staged by Major BROWN, Westerlea, which were outstanding for such a late season. He was also awarded the premier honours for Begonias, Collerette, Pompon and Coltness Gem Dahlias, Roses, Carnations and Picotees, winning thirteen first prizes in all. Other successful exhibitors were Mr. D. GRAHAM (six table plants, two Coleus, two single Begonias and three vases of self-coloured Antirrhinums), Mr. T. HARVEY (two foliage plants and four exotic Ferns), Mr. J. POPE (Pansies and Violas) Mr. R. MACAUSLAN (two house plants in flower, and twelve blooms of Begonias), and Mr. A. CARMICHAEL (six bunches of annuals, six bunches of herbaceous flowers, six vases and three vases of Sweet Peas and six Pentstemons).

The fruit exhibits were disappointing. Mr. H. BRUCE excelled with a collection of six varieties grown in the open, while Mr. D. MCARTHUR was placed first for Peaches and for black and white Grapes.

Keen competition ruled in most of the vegetable classes, the principal prize winners being Mr. T. COUPER (eleven firsts), Mr. NEIL WHYTE, Mr. D. GRAHAM, Mr. A. COOK, Mr. T. HARVEY, Mr. H. BRUCE, Mr. H. JUDD and Mr. William JACKSON.

NON-COMPETITIVE EXHIBITS.

The centre of the hall was occupied by a large and varied collection of Palms and flowering plants arranged in effective colour groups by the Superintendent, Mr. I. M. Fleming.

Sir JOHN REID, Ardencraig, Bute, showed Gladioli primulinus in variety, and a representative collection of Astilbes. Mr. ROBERT SHAND, Meikleriggs, staged orchard house fruit, and Mr. HUGH MORRIS, Bishopston, had a table of herbaceous flowers.

Trade groups were exhibited by the SCOTTISH WHOLESALE CO-OPERATIVE SOCIETY, Mr. JAMES LAIDLER, Paisley; Mr. JOHN MCFIE, Paisley; and Messrs. ALEXANDER LISTER AND SON, Rothesay.

ROYAL HORTICULTURAL.

THE following awards have been made to the undermentioned flowers by the Royal Horticultural Society after trial at Wisley.

Annual Poppies.

AWARDS OF MERIT.

Somniferum Type.—*The Bride* and *Snowball*, both sent by Messrs. W. H. SIMPSON AND SONS; *Bright Lilac*, sent by Messrs. JAMES CARTER AND Co; *Miss Sherwood*, sent by Messrs. BARR AND SONS.

Shirley Type.—*Picotee*, sent by Messrs. BARR AND SONS and Messrs. WATKINS AND SIMPSON. *Shirley, Selected Mixed*, sent by Messrs. BARR AND SONS; *Shirley Mixed*, sent by R.H.S.

Nudicaule Type.—*Sunbeam Improved*, sent by Messrs. G. STARK AND SON.

Species.—*Papaver apulum*, sent by the CHELSEA PHYSIC GARDEN.

HIGHLY COMMENDED.

Somniferum Type.—Cardinal, sent by Messrs. W. H. SIMPSON; Scarlet, sent by Messrs. JAMES CARTER AND CO.; May Campbell, White Swan (Snowdrift), and Charles Darwin, these three sent by Messrs. BARR AND SONS; White, sent by Messrs. HEINEMANN AND CO.; Cardinal White, sent by Messrs. DOBBIE AND Co.; The Admiral, sent by Messrs. HEINEMANN AND CO.

Shirley Type.—Deep Pink, sent by Messrs. WATKINS AND SIMPSON; Salmon Rose, sent by Messrs. DAEHNFELDT AND JENSEN; Snow Queen, sent by Messrs. BARR AND SONS; American Legion, sent by Messrs. WALLER-FRANKLIN; New Double Queen, sent by Messrs. BARR AND SONS; The Shirley Mixed, sent by Messrs. W. H. SIMPSON, Birmingham, and Messrs. DOBBIE AND Co; Ryburgh Hybrids, sent by Messrs. G. STARK AND SON.

Nudicaule Type.—Coonara, sent by Messrs G. STARK AND SON.

Species.—Papaver glaucum, sent by Messrs. DAEHNFELDT AND JENSEN; P. setigerum sent by Messrs. BARR AND SONS; P. umbrosum, sent by Messrs. DAEHNFELDT AND JENSEN; P. pavoninum (Peacock), sent by Messrs. BARR AND SONS.

COMMENDED.

Shirley Type.—The Shirley Selected, sent by Messrs. WATKINS AND SIMPSON.

Aquilegias.

AWARDS OF MERIT.

A. coerulea var. Mrs. M. Nicholls, sent by Messrs. ZWAAN AND VAN DER MOLEN and Messrs. J. CARTER AND CO.; *A. glandulosa*, sent by Messrs. BARR AND SONS.

HIGHLY COMMENDED.

Rose and Pink Shades, Longspurred, and Longspurred Blue Hybrids, all sent by Messrs. J. CARTER AND CO.; Mrs. Scott Elliott's Strain, sent by Messrs. WATKINS AND SIMPSON, Messrs. DANIELS BROS., and Mr. W. H. SIMPSON; Selected, sent by Messrs. BLACKMORE AND LANGDON; Diadem, sent by Messrs. ED. WEBB AND SONS; Selected Hybrids, sent by Messrs. ZWAAN AND VAN DER MOLEN; coerulea, sent by Messrs. WATKINS AND SIMPSON; Olympica, sent by Messrs. BARR AND SONS; pyrenaica grandiflora, sent by Messrs. BARR AND SONS.

COMMENDED.

Longspurred Mixed, sent by Messrs. STUART AND MEIN; Longspurred Hybrids, sent by Messrs. WATKINS AND SIMPSON.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AT the meeting held at Southport Flower Show on Wednesday, August 24, the members of Committee present were: Messrs. J. B. Adamson (in the chair), A. Burns, B. Collins, A. Coningsby, J. Evans, J. McCartney, D. McLeod, G. V. Llewelyn, A. Keeling, W. J. Morgan, and H. Arthur (Secretary).

FIRST CLASS CERTIFICATES.

Cattleya Hardyana var. Royal Crimson, C. Hassallii var. Hercules, C. Vesta var. Madonna, C. Irene var. Queen Elizabeth, C. Lorna var. Princess Royal, Laelio-Cattleya Profusion var. Royalist, L.-C. Fowleri var. Mammoth, L.-C. Minosa var. magnifica, L.-C. Hassallii var. The Premier, Brasso-Cattleya British Queen var. Enchantress, and Odontioda Lorna, Gerrish's var., all from J. B. ADAMSON, Esq.

Cattleya Momus var. Duchess of York; Brasso-Cattleya Evansiae and Laelio-Cattleya Soulange var. Empress, from Mr. JOHN EVANS.

Cattleya Aeneas (Dowiana aurea × Venus), Laelio-Cattleya Monarch (Serbia × aurea), and *L.-C. Profusion var. Medric*, from Messrs. J. AND A. MCBEAN.

Cattleya Heliodor var. Golden Gem and *Odontonia Olivia var. Princess*, from Messrs. CHARLESWORTH AND CO.

Brasso-Laelio-Cattleya Ursula var. Princess Elizabeth (a Gold Medal being also awarded), from Messrs. A. J. KEELING AND SONS.

Awards of Merit.

Cattleya Eleanore var. Comet, C. Vesta var. Purity, C. Hardyana var. The Sultan, C. Hardyana var. Jupiter, Laelio-Cattleya Queen Mary var. Lustre; Sophro-Laelio-Cattleya Magnet var. Crimson Glow, and Odontioda Romany (*Odm. spectabile* × *Odta. Brewii*), from J. B. Adamson, Esq.

Cattleya Luegeae var. Vivid, C. Emily (*Hesta* × *Enid alba*), *Laelio-Cattleya Profusion var. Teutonic, L.-C. Profusion var. Pacific; Brasso-Cattleya Innocence* (*C. Enid alba* × *B.-C. Bianca*); *Odontoglossum Ovidius* (*Felicity* × *St. James*), *and Odontioda Cooksoniae var. Vivid*, from Messrs. J. and A. McBean.

Cattleya Hardyana var. Dracula, C. Helga, Odontioda Brackenhurst var. atro-rubens, Brasso-Cattleya Pallus var. grandis, Odontoglossum St. Mungo and Odontonia Corona, from Messrs. Charlesworth and Co., Ltd.

Cattleya Hardyana alba, Llewelyn's var.; Laelio-Cattleya Warrior, Llewelyn's var.; Cypripedium Llewelyn Knight (*Corneyanum* × *Selene*) and *Odontoglossum majesticum, Llewelyn's var.*, from G. V. Llewelyn, Esq.

Cattleya Hardyana alba, Vestey's var.; Laelio-Cattleya Profusion, Warren var.; and *L.-C. Perseus var. sulphurea*, from the Hon. G. E. Vestey.

Cattleya suavior var. excelsa; Sophro-Cattleya Salonica; Brasso-Laelio Admiral Jellicoe; and *Odontioda Kittie*, from Messrs. Stuart Low and Co.

Cypripedium Baldwinii (*Lord Wolmer* × *Charlesworthii*) and *Odontioda Marton* (*Odm. waltonense* × *Odta. Charlesworthii*), from Messrs. A. J. Keeling and Sons.

Odontioda Zenobia var. The Sultan, from Alderman Hy. Astley-Bell.

Awards of Appreciation, First Class.

To Laelio-Cattleya var. Brilliant, from J. B. Adamson, Esq., and to Cypripedium leyburnense var. Robin Hood, from G. V. Llewelyn, Esq.

Cultural Certificates.

To Mr. J. Howes, for Odontioda Romany; Odontioda Madeline var. Ruby, Epidendrum vitellinum and Oncidium leucochilum; to Messrs. J. and A. McBean, for Odontoglossum Aphrodite, O. Theseus, O. wylamense and Oncidium Leopoldianum.

Groups.

Gold Medals for groups were awarded to J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes); The Hon. G. E. Vestey, Birkdale (gr. Mr. B. Collins); Messrs. Charlesworth and Co., Ltd., Haywards Heath; Mr. John Evans, Colwyn Bay; Messrs. A. J. Keeling and Sons, Bradford; and Messrs. J. and A. McBean, Cooksbridge.

Large Silver-Gilt Medal to G. V. Llewelyn, Esq., Southport.

Silver-Gilt Medal to Messrs. Stuart Low and Co.

Large Silver Medal to Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns.)

The next meeting will be held at the Houldsworth Hall, 90, Deansgate, Manchester, on Friday, September 16, 1927.

TRADE NOTES.

Patents and Trade Marks.—Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle*.

Obituary.

W. J. Godfrey.—Heart failure was the cause of the death of Mr. W. J. Godfrey, of Exmouth, on August 27. The deceased gentleman, who was sixty-nine years of age, occupied a foremost position in the horticultural world at a time when exhibition Chrysanthemums were more popular than they are to-day—indeed, his name was a household word among Chrysanthemum specialists. For many years he carried on the nursery business at Exmouth, and was an especially clever raiser and grower of Chrysanthemums, Regal and Show Pelargoniums, Oriental Poppies and Canterbury Bells. Many well-known Chrysanthemums bear his family name, and it will be a long time before Molly Godfrey, a single variety, will be entirely superseded. A sensitive man, Mr. Godfrey was also a keen critic, and on more than one occasion he severely criticised the work of the National Chrysanthemum Society, on whose Committee he occupied a position for a long period. Unfortunately, good health did not attend him in recent years, and his many friends greatly regretted that good fortune also failed to smile upon him. Mr. Godfrey took a large interest in local affairs and was once Mayor of the town of Exeter. A portrait and appreciation of Mr. W. J. Godfrey appeared in *The Gardeners' Chronicle* of December 6, 1924.

Alfred Edward Prince.—As these pages go to press we learn with very deep regret of the death of Mr. Alfred Edward Prince, of Longworth, Faringdon, one of the most noted raisers and growers of Roses. The deceased gentleman had been in failing health for some time past, and recently underwent an operation in a nursing home at Reading. For some little while after the operation we heard that he was making a favourable recovery, but alas! he passed away early in the morning of Tuesday, September 6.

ANSWERS TO CORRESPONDENTS.

American Pillar Rose with Flattened Stem.—*H. V. W.* The flattening of the stem described belongs to the class of abnormalities known as fasciation. Little is known as to the causes of fasciation, which is common in all groups of vascular plants.

Bracken in New Garden Land.—*W. H. H.* It is likely that strong roots of the Bracken would send up a considerable proportion of leaves the first year, even though buried under two spits of soil, because there would be plenty of reserve food in the rhizomes to lengthen the leaf stalks in their efforts to reach the light. They would not be unmanageable, however, amongst such crops as Potatos, Cabbages and other strong growers, or even Peas and Beans where the Dutch hoe could be freely used, say, once a fortnight, up till August or September. The land itself and the vegetables would be much benefited by this frequent hoeing. There would not be many crops of Bracken fronds in a season, because the rhizomes have to develop a considerable length between every two fronds. Every time a frond is cut it means a great waste of reserve food, and the rhizomes would soon get exhausted. As the turf is the best part of the soil, it would be best if this were kept within a foot of the surface. This could be done by bastard trenching the land, forking over the bottom spit, then turning the top spit of the second trench on to the bottom, face downwards. The loose soil or crumbs could then be thrown on to the top of this first spit, and that would give sufficient depth for the roots of the vegetables. Bracken may be reduced two-thirds of its vigour by one cutting in June, when the roots are not disturbed; but where vegetables are concerned it is best to commence hoeing so soon as the leafy part of the frond is above the soil. It would not be advisable to sow Carrots Onions or similar crops the first year, with the Bracken rhizomes at that depth, though it would be quite practicable the second year, if the Bracken is never allowed to unfold the leafy portion of the frond the first year. So soon as the turf is rotted, it would be easy to remove the rhizomes at the second digging, by keeping an open trench the depth of the spade and then forking over the spit beneath it.

Irises for Garden Border.—*T.* Plant the Irises in threes, at the points of a triangle, leaving one foot of space between the clumps of three. There will be two rows as the space does not allow of three, and there will be not much more than a foot between the rows. This will allow twelve to thirteen clumps of three in each row, *i.e.*, from thirty-six to thirty-nine plants in each row, or about seventy-two plants altogether. In addition to Gajus, Isoline, Porsenna, Prosper Laugier, and Madame Gaudichau, we recommend Fro (yellow), Alcazar, Lord of June, Rhein Nixe, Asia (Asia can now be bought for 2s. 6d.) Prospero and Le Neige (white). Yellow and white sorts will be wanted to relieve the darker colours. We therefore recommend 9 Gajus; 9 Fro (yellow); 9 Rhein Nixe (white and crimson); 3 La Neige or White Queen—the latter is not so good as La Neige, but there is no really good cheap white; Mrs. Horace Darwin is still considered worth growing by many people, and is very free, which La Neige is not; 6 Isoline; 6 Porsenna; 6 Prosper Laugier; 6 Madame Gaudichau; 6 Alcazar; 6 Lord of June; 3 Asia and 3 Prospero. Do not mix lime with farmyard manure, but if lime is necessary apply it a month or more in advance of the manuring. Irises require very little manure. If the ground is limed very little bone-meal will be needed. Do not plant the rhizomes too deeply.

Names of Fruits.—*G. E. S.* Plum Prince of Wales.—*Heatherbank.* Gascoyne's Scarlet.—*A. S.* 1 and 3, Gladstone; 2, White Astrachan.

Names of Plants.—*A. H. W.* Pleroma macrantha; 2, Rudbeckia Goldstrahl; 3, Campanula; species not recognised; 4, Anthemis tinctoria; 5, Rudbeckia speciosa; 6, Helenium autumnale. *Interested.* 1, Myrtus communis; 2, one of the hybrids of Veronica speciosa. *G. E. S.* Morus nigra (Mulberry).

Tomatos and Chrysanthemums Unhealthy.—*A. J. G.* Your Tomato plants show signs of Stripe disease in the top. This disease is caused by Bacillus lathyri, and infection was probably seed-borne. The roots of your Chrysanthemums have been infected by a fungus, Fusarium sp., which is the cause of the wilt. Plants standing in the open have received a good deal of rain this year and where insufficient drainage has been provided, the water has lain too long in the pots. This condition leads to infection by Fusarium. A thunderstorm frequently affects plants in such a way that any diseases from which they may be suffering are brought to a head some days after the storm and, while there was no sign of injury by lightning, it may have affected your plants in this way. It will be difficult to cure the plants, but we advise watering them with Uspulun dissolved in water at the rate of one part of the dry powder in four hundred parts of water.

Wireworms in Soil.—*J. M.* The most effective remedy for the destruction of wireworms is gas-lime. As you propose to plant Tomatos, you should apply the gas-lime at the rate of 28 lbs. to every cartload of soil used, mixing it very thoroughly and turning the whole of the material over several times during the following eight weeks. It will not be advisable to use the ground for a crop before this period, as only by then will the poisonous properties of the lime be dispersed.

Communications Received.—E. E. T.—W. C.—A. McC.—L. B. C.—W. K.—H. R. S.—J. T. W.—C. M.—A. D. C.—R. E.—J. S.—M. K.—A. C.—E. J.—J. S.

MARKETS.

COVENT GARDEN, Tuesday, September 6th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink	18 0-21 0
—yellow ...	12 0-18 0
—bronze ...	15 0-18 0
—white ...	12 0-18 0

	s. d. s. d.
Crotons, doz....	30 0-45 0
Cyrtomiums ...	10 0-25 0
Erica nivalis, 48's, per doz.	27 0-30 0
— 60's, per doz.	12 0-15 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Roses, Polyantha, 48's, per doz.... ...	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz., bun.	8 0—9 0
—cuneatum, per doz. bun. ...	5 0—8 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. „ ...	1 0—1 6
short „ ...	0 6—1 9
Asters, white, per doz. bun.	2 6—6 0
—coloured, per doz. bun. ...	4 0—6 0
—single, coloured, per doz. bun.	3 6—4 6
Carnations, per doz. blooms .	1 6—3 6
Chrysanthemum Sanctity, per doz. blooms .	2 6—4 0
—Mrs. J. Pearson, per doz. bun.... ...	5 0-10 0
—white Duchess, per doz. blooms	4 0—6 0
—yellow, per doz. blooms ...	2 6—4 0
—bronze, per doz. blooms .	1 6—3 0
—spray, pink, per doz. bun.	9 0-10 0
—spray yellow, per doz. bun.	8 0-10 0
—spray white, per doz. bun.	9 0-15 0
Coreopsis, per doz. bun. ...	1 0—1 6
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz. ...	1 9—2 6
Daisies, Shasta, large, doz. bun.	2 6—3 0
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	9 0-12 0
Gaillardia, per doz. bun. ...	1 6—2 6

	s. d. s. d.
Gardenias, per doz. blooms .	4 0—6 0
Gladiolus, giant varieties, per doz. spikes—	
—pink shades...	1 0—1 6
—scarlet ...	1 6—2 6
—white ...	1 6—2 0
Gypsophila paniculata, double, per doz. bun.	12 0-24 0
Heather, white, per doz. bun.	4 0—6 0
Lapagerias, per doz. blooms .	3 6—4 0
Larkspur, various, per bun. ...	4 0—5 0
Lilium speciosum album, per bun. ...	3 6—4 0
—short, per doz.	3 6—4 0
—rubrum, long, per bun. ...	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per doz.	1 6—2 0
—short, doz. blooms ...	2 0—2 6
Lily-of-the-Valley, per doz. bun.	30 0-36 0
Marigolds, per doz. bun. ...	3 0—4 0
Michaelmas Daisy, King George, per doz. bun.	6 0—8 0
Montbretia, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas ...	36 0-48 0
Physalis, per doz. bun.... ...	12 0-18 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—2 6
—Madame Butterfly ...	1 6—3 0
—Golden Ophelia	1 6—2 6
—Mrs. Aaron Ward ...	1 0—1 6

Cut Flowers, etc.—*continued.*

	s. d. s. d.
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 6—2 0
—Hoosier Beauty	2 6—4 0
—Liberty ...	1 6—3 0
—Molly Sharman Crawford ...	2 0—3 0
—Premier ...	— 3 0
Smilax, per doz. trails ...	3 6—4 6
Statice sinuata, mauve, per doz. bun. ...	6 0-10 0

	s. d. s. d
Scabiosa caucasica, per doz. bun.	4 0—5 0
Stephanotis, per 72 pips ...	3 0—4 0
Stock, per doz. bun.—	
—double, white	9 0-12 0
— —mauve ...	9 0-12 0
Sweet Sultans, white, per doz. bun.... ...	4 0—5 0
—mauve, per doz.... ...	4 0—5 0

REMARKS.—The improved weather has benefited all out door flowers. Asters, in particular, show a considerable increase in numbers, and they are much better in quality. Chrysanthemums are also more plentiful, the latest to arrive being the bronze varieties, Almirante and Alvira; there is more "spray" both in white and coloured varieties. Carnations are still arriving in large quantities, and their prices vary according to quality, the cheaper blooms being most plentiful. Best quality Roses are not too plentiful, and these, like Carnations, fluctuate in price. Gladioli are practically over for the season. The quantities of Lilium longiflorum exceed the present demand and prices are on the down grade, but L. lancifolium, both white and pink, also Lily-of-the-Valley, are still in short supply. Physalis is gradually improving in quality and selling more freely. Gardenias are the most plentiful of choice white blooms, Stephanotis and Lapagerias being somewhat shorter in supply. Orchid blooms are only obtainable if ordered in advance. Fairly large quantities of Dahlias are on offer, but there is very little demand for these flowers. Michaelmas Daisy King George is the newest subject in this department.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beets, New, per doz. bun. ...	2 0—2 6
Cabbage, per doz.... ...	1 0—1 6
Carrots, new	3 0—4 0
Cucumbers, doz.	2 6—4 0
—Flats, 36's, 42's	6 0-12 0
Aubergines, per doz.... ...	2 0—2 6
Leeks, per doz.	2 0—2 6
Lettuce, round, per doz. ...	0 9—1 0
—long ...	1 0—2 0
Mint, per doz....	1 6—2 0
Marrows, per tally... ...	7 6-10 0
Mushrooms—	
—cups... ...	2 6—3 0
—broilers ...	1 6—2 0

	s. d. s. d.
Onions—	
Egyptian ...	11 0-13 0
—Dutch ...	8 0-10 0
—Spanish ...	13 0-14 0
Parsnips, per cwt. ...	4 0—4 6
Peas, per bushel	8 0-10 0
Potatos—	
English ...	3 6—6 0
Radishes, per doz.	1 0—2 0
Savoys, per tally... ...	7 6-12 6
Tomatos, English—	
—pink... ...	4 6—6 0
—pink and white	4 6—6 0
—white ...	3 6—4 0
—blue ...	3 0—4 0
—Guernsey ...	3 6—4 0
—Jersey ...	4 0—4 6
—Dutch ...	3 0—4 0
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Grenadier, Best, per bush. ...	4 0—7 0
—Other cookers	3 0—7 0
—Worcester Pearmain, ½ sieve	3 0—7 0
—James Grieve	3 0—4 0
—Miller's Seedling, ½ sieve ...	3 0—5 0
Apples, American—	
—Gravenstein, per case ...	11 6-16 0
Bananas ...	12 0-20 0
Figs, per doz....	4 0—6 0
Grape Fruit—	
—Blue Goose, per case ...	— 60 0
—Californian ...	— 42 6
Grapes, English	
—Colmar ...	2 0—3 6
—Black Hamburgh, per lb.	1 6—2 0
Grapes, Alicante	1 3—2 3
—Gros Maroc...	1 6—3 0
—Muscat ...	2 0—6 0
—Canon Hall...	3 0—6 0

	s. d. s. d.
Lemons, Messina Boxes ...	20 0-36 0
—Naples, per case...... ...	24 0-34 0
Melons, each—	
—English and Guernsey ...	2 0—7 0
Canteloupe each ...	2 0—7 0
Oranges, per case—	
—Cape Navel...	18 0-22 0
—Seedling ...	16 0-18 0
—Cape Valencia	16 0-18 0
—Naartjes, per tray... ...	3 0—3 6
Nectarines, doz.	5 0-15 0
Peaches, per doz.... ...	6 0-12 0
Pears, Californian—	
—Beurré Hardy	23 0-31 0
—Bartlett ...	27 0-30 0
Pears, French—	
—Beurré Hardy, crates, 18's, 15's	— 4 6
—crates (64-72)	11 0-12 0
Pines, case ...	15 0-32 0
Plums—	
—French ...	4 0—6 0
—Victoria ...	10 0-14 0
—Gage ...	8 0-10 0
—Pond's Seedling	9 0-11 0
—Monarch ...	8 0-10 0
—Bush ...	5 6—6 0
—Damsons ...	5 0—6 0

REMARKS.—One of the features of the fruit market is the comparatively poor prices of English Apples. The quantities are large, but the general standard of quality is not high, evidence of which is the difficulty of finding really well-packed, bright-coloured samples of Worcester Pearmain and large cookers, also the comparatively good prices such fruit is making. Plums are selling fairly well and the prospects for Monarch, which is just commencing to arrive in the market, should be favourable to good prices. Hothouse Grapes, Peaches, Nectarines, Figs and Melons are selling moderately well. English Pears so far have been plentiful, mainly of the more common varieties. Pears from Italy, France, Belgium and California are meeting a good demand. English Tomatos are in better supply and sell fairly well. Cucumbers, however, are a bad trade, from the growers' point of view, the demand for them being very slow. Cultivated Mushrooms are a good trade, although a few from fields are arriving in competition with them. The vegetable salesmen report indifferent conditions for almost everything they are handling, except a few good Peas, which are wanted. The Potato trade remains much about the same as last week, with a downward tendency in prices.

GLASGOW.

THE improvement in the prices of cut flowers recorded in our previous issue made further progress during the past week despite the large daily supplies. Chrysanthemums in particular were very plentiful and met with a ready sale at advanced values. No. 1 white ranged from 1s. 6d. to 2s. (6's); Countess and Debutante, 1s. 6d. to 1s. 9d.; Elsie Heady, 1s. to 1s. 4d.; Holicot Bronze, 10d. to 1s. 2d.; Holicot Yellow, 9d. to 1s. 2d.; No. 2 pink, 2s. to 2s. 6d. per dozen; No. 1 bronze, 1s. 6d. to 2s.; Phoenix, 1s. 3d. to 1s. 6d.; Phoenix (large sprays), 8d. to 1s.; and Loan's pink, crimson and yellow, 6d. to 8d. per bunch. Gladioli were worth 1s. to 2s. per dozen; Carnations, 1s. 3d. to 1s. 9d. per dozen; pink Roses, John C. M. Mensing and Madame Butterfly, 1s. 6d. to 2s. 6d.; Mrs. Herbert Steven and Richmond, 1s. to 1s. 6d. per dozen. Prices of Lilium rubrum and L. longiflorum (Harrisii) averaged 3s. 6d. per bunch; Sweet Peas, Calendula and Statice realised 2d. to 4d.; Marguerites, 2d. to 3d.; Asters, 1d. to 4d.; Gypsophila paniculata, 4d. to 6d.; Smilax, 1s. 6d.; and Asparagus, 9d. to 1s. per bunch.

Business in the fruit market was well maintained Victoria Plums sold at 7d. to 9d. per lb.; Switzen Plums at 9s. to 10s. per sieve; Egg Plums at 8s. to 9s. and Damsons at 9s. to 10s.; Gooseberries fetched 3s. to 3s. 6d. Lord Derby Apples, selected, sold for 24s. per cwt.; Worcester Pearmain, 6s. to 8s. per bushel; and American Gravenstein, 12s. to 15s. per case. Sunkist Oranges were worth 19s. to 22s. per case. The value of other fruits was: French Beurré Hardy Pears, 13s. to 14s. per crate; Scotch Muscat Gages, 4s. per lb.; English Gros Colmar Grapes, 1s. 6d. to 1s. 9d.; and Dutch Black Grapes 8d. to 9d. English Gages, were cheap at 6s. per 24 lbs.; and Californian Plums realised 18s. for Giants, and 15s. 6d. for Grand Duke.

In the vegetable department Marrows and Cucumbers made 4s. to 6s. per dozen; Cauliflowers, 4s. to 8s.; Lettuce, 1s. to 2s.; Broad Beans, 6s. per pot; dwarf Beans, 6s. half-pot; and French Beans, 3d. to 6d. per lb. Scotch Tomatos realised 7d. to 8d. per lb., and Jersey Tomatos, 5d. to 6d.

CATALOGUES RECEIVED.

Bulbs.

DICKSON, BROWN AND TAIT, 57, Cross Street, Manchester
R. H. BATH, LTD., The Floral Farms, Wisbech.
BROWN AND WILSON, 10, Market Place, Manchester
FINNEY'S, 20, Grainger Street, Newcastle-on-Tyne.
SALE AND SON, LTD., Wokingham.
MCHATTIE AND CO., Chester.
SAMSONS, LTD., 8 and 10, Portland Street, Kilmarnock.
DOBBIE AND CO., LTD., Edinburgh.

FRANK CANT AND CO., LTD., Braiswick Rose Gardens. Colchester, Roses.
J. R. BAXTER AND CO., 69, Oxford Street, Manchester.—New steel bulb bowl.

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Cheaper Quality for Garden Use: 30×1, 2/-; 30×2, 4/-; 30×3, 6/-. Bush Netting, 7lbs., 2/6.
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THE Gardeners' Chronicle

*No.*2125.—*SATURDAY, SEPTEMBER* 17, 1927

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 55.7°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 14 10 a.m. Bar. 29.9. Temp. 60°. Weather, Showery

Bulbs for the Garden. When summer is giving its lavish display of blossom in the garden—and even this summerless summer has been amazingly generous in blossom—the needs for the future of the garden must not be neglected. For, indeed, though procrastination is the thief of time, it is a giver of much tranquility. And yet the good gardener knows that if bulbs are to play their supremely beautiful part in the spring garden and also in late summer and autumn they must be got into the ground in good time. Late-planted bulbs may sometimes make a brave display, but that is only a concession to the lucky, and every gardener knows that although others enjoy garden luck, the successes of his own garden are due to pains and forethought. There is, of course, another and cogent reason for ordering bulbs early. The best are always, as it were, on the top of the basket, and late comers must, perforce, be content with plants of lesser worth. And what a wealth of choice there now is! Home-grown Daffodils and Tulips at least as good—we would dare even to say better—as those grown abroad. Proof of this should be forthcoming in the London parks this year when, following on the memorable display of Dutch bulbs last year, English-grown bulbs are to be planted in an almost infinite variety. There are also the Hyacinths—the stiff, proud ones, and those with delicacy of form and colour, and these the Dutch growers must provide us with; for up till now the soil of this country—even the magic soil of Lincolnshire—has not succeeded in growing Hyacinths successfully. Then there are the lesser, but no less beautiful bulbous things, the Crocuses and Scillas, Chionodoxas and Muscari, with, later on, the Brodiaeas as well as those loveliest flowers, the Lilies-of-the-Valley. Few, if any plants have been more developed than the Crocuses, with the result that the garden may be made gay and lovely with brilliant yellow and softest of mauve-blues. For sheltered places and enterprising gardeners there are, of course, the autumn and winter-flowering Crocuses, but those who play for safety are content to raise these delicate beauties in the shelter of a cold frame and for bringing sunshine into the house during the dark days. Surely no garden lover's household should lack a few bowls of bulbs in winter time. Then there are the "bulbs"—using the term in a loose, but convenient sense—which produce summer and autumn flowers—the Lilies, Gladioli, Colchicums, Watsonias, Belladonna Lilies, and stately Galtonias. How beautiful these all are needs no saying. To-day he who walks through Hyde Park—a place of floral enchantment woven by the skilled hand of a great gardener—must admire most of all the broad breadth of pink-mauve Colchicums in the grass beneath the trees. All the summer and autumn "bulbs" should also be ordered and planted in good time. It is true that some leave the Gladioli in the ground, but it seems to us from our own observations that the new disease of Gladioli marked by a yellowing and a withering of the leaves, is much more prominent on plants which wintered in the ground than it is on those which have been newly planted. If so, though the gardener may grieve, the florist will be pleased to assuage his grief by providing corms which are free from this menacing disease. Lily bulbs planted early and well in soil containing plenty of humus, if well done, give, generally speaking, the finest display of all garden plants. Lilium Henryi, L. auratum, L. a. platyphyllum and L. speciosum flourish exceedingly if the top eighteen inches of soil are removed at planting time, the ground beneath broken up and enriched with a foot or so of well-decayed manure, and the soil then replaced, the bulbs being planted in the meantime, though, of course, not in immediate contact with the manure. Finally, there is much room for care and forethought in the way of planting. In the large garden where shrubs abound, the Lilies may appear in groups among the shrubs, but in the smaller garden, where perforce they have to be planted in beds, carpeting plants, delicate and choice, to remove any impression of legginess, may be used with great effect. Perhaps the most useful plants for this purpose are the Polyanthuses, for they give a greenness to the ground when the Lilies are in flower, and they give also a bright promise of flowers during the spring, when the Lilies will be at rest.

"Iconum Botanicarum Index Londinensis."—The production of a new edition of Pritzel's great work has been looked forward to with great anticipation for many years past. Readers of *The Gardeners' Chronicle* are well aware that the new edition is being prepared by Dr. O. Stapf, at Kew, under the auspices of the Royal Horticultural Society, and that it will be printed by the Clarendon Press. A circular has just been issued in which it is stated that the *Index Londinensis* will be published in six volumes, two volumes to be sent out in each of the years 1928, 1929 and 1930. In size, these volumes will approximate to those of the *Index Kewensis*, and the matter will be printed in three columns to the page. The cost of production is necessarily heavy, and the subscription price has been arranged on the basis of either (1) a lump sum of £25, payable in advance of publication, or (2) a subscriber's payment, £9 for the first two volumes and £4 10s. for each of the remaining four volumes. The price to non-subscribers on publication will be not less than £5 per volume. It was in 1855 that Georg August Pritzel published his first edition of the *Iconum Botanicarum Index*, and in 1866 he issued a supplementary list of references up to the end of the year 1865. From thence to the present time, these two volumes, containing over 107,000 references to illustrations of flowering plants and Ferns, have remained the standard alphabetical register or book of reference to the illustrations of plants which have appeared in botanical, horticultural and other publications. In more recent years greater facilities for reproducing illustrations of plants have naturally led to a vast increase of these illustrations, therefore it became desirable to attempt to prepare a continuation of this great index. In 1917, the Council of the Royal Horticultural Society decided to undertake the revision and continuation of Pritzel's *Index*, and Dr. Otto Stapf was appointed editor. The Director of the Royal Botanic Gardens, Kew, placed accommodation at the disposal of the Society as well as the use of the Kew library, and permitted the manuscript supplement of the Pritzel *Index*, which has been continued at Kew, to be typed for the revision. The great task is now nearing completion, and the first portion is ready for the press. The new edition will contain 450,000 references to illustrations of flowering plants, Ferns and Fern allies published in botanical, horticultural and other works and journals between the years 1753 and 1920 inclusive, and also all the references in the original *Index*. The circular referred to above states that all botanical plates and figures are cited as they are given in the respective publications, and no attempt has been made to correct the name of a plant which may now be known under some other name. Obvious errors, other than taxonomic, have, however, been corrected. In order to obviate the disadvantage of the lack of uniformity in nomenclature those generic names which are now regarded as synonyms are cited under the generic names now generally accepted. For example, Amygdalus and Cerasus are cited under Prunus, and cross-references are given from them to the latter genus. We learn with very great pleasure that references to figures of some of the more important hybrids have been included, but, of course, it has been impossible to index the illustrations of numberless garden varieties of flowers and plants. In short, the basis of the selection has been: (a) all plates and drawings, whether reproduced from photographs or not, are included, if accompanied by a scientific botanical name; (b) all reproductions of sufficient botanical, horticultural, scientific, artistic, or historical value are included; (c) it has not been considered necessary to include all the plates or drawings in a work, but only those which conform to the conditions laid down; (d) the illustrations cited, as is the case in the original *Pritzel*, are of Phanerogams or Pteridophytes, or of some parts of such plants, but purely anatomical or teratological figures are not registered; (a) attention has been paid to "habit" figures, more particularly in the case of trees, and to analyses or any part-illustrations which depict differential characters essential for the determination of species, and for such figures special symbols or abbreviations are employed. The circular contains a reprint of page 17, and in this we notice there are no fewer than seven references to illustrations which have appeared in *The Gardeners' Chronicle*.

A Great Dahlia Exhibition.—The exhibition of the National Dahlia Society, held on Wednesday last, was probably the biggest display of Dahlias ever held in this country, and marked the highest tide of prosperity the society has ever reached. All lovers of this beautiful autumn flower will be gratified to learn that the membership of the National Dahlia Society has been doubled within the past three years, and already this year the Society has enrolled fifty new members, thanks, chiefly, to the energy displayed by Mr. W. J. Chittenden, the Hon. Secretary. There were between forty and fifty thousand blooms at the show, and they served to fill the whole of the Hall, a few exhibits remaining from the R.H.S. show of the previous day being accommodated in the annexes. Since the shows of the N.D.S. were held in the Royal Aquarium, Westminster, and the Crystal Palace, Sydenham, the type of flower exhibited has changed considerably, for whereas in the old times, Show, Fancy, Cactus and Single Dahlias were the principal types displayed, the modern Paeony-flowered, Decorative and even the Star and Collerette types are now the most numerous. The Show and Fancy sorts have almost dropped out of cultivation, and we doubt if any grower nowadays would be able to show thirty-six distinct varieties, or even twenty-four, as in the old days when such growers as Turner, of Slough; Seale, of Sevenoaks; Mortimer, of Farnham; and Smellie, of Busby, were pre-eminent with this type of flower. One reason of the decline of the Cactus Dahlia in favour was its inferiority for garden purposes compared with the others. Some of these modern garden varieties have flowers of exceptionally large size, such as the orange-buff Berengaria; the light red Mabel Lawrence; the rosy-mauve Susan G. Tevis, and the pink Kitty Dunlop. Each year raisers submit large numbers of new varieties for award, and at the show on Wednesday no fewer than eighty new varieties were considered by the joint R.H.S. and N.D.S. Committees. The show attracted exhibits from Holland and Belgium, and altogether the entries numbered three hundred.

Laelio-Cattleya Canberra.—We are asked by Messrs. Cowan and Co. to state that Laelio-Cattleya Canberra, an illustration of which was published in our issue of September 10, p. 207, received a First Class Certificate from the Royal Horticultural Society's Orchid Committee, and not, as stated under the illustration, an Award of Merit. We are glad to congratulate Messrs. Cowan's on having obtained the higher award for this very beautiful hybrid.

Holland County Potato Show.—The seventh Holland County Potato show, of which the schedule has just been issued, will be held in Spalding, on Thursday, October 27. The show is to be opened by the Rt. Hon. the Marquess of Salisbury, K.G., and Councillor W. Gilding, Chairman of the Show Committee, will preside at the opening. Twelve cups are again offered for competition, ranging in value from ten to thirty-five guineas. An interesting class is that for one chitting tray of seed Potatos, boxed for sprouting, for which a Challenge Cup is offered by Messrs. Knight Bros., Potato Merchants, Kings Cross. The prize money in this class is £3 3s. 0d.; first prize £2 2s. 0d.; second prize; £1 1s. 0d.

Brussels International Horticultural Exhibition.—A large, interesting and beautiful exhibition was held in the Grand Hall and Gardens of the Palais du Cinquantenaire, Brussels, from September 10 to September 18. Dahlias were the great feature, and large decorative sorts were those most in evidence from Belgian, French and Dutch growers. Palms and other foliage plants, Orchids, Coleuses, Begonias of the Rex type, fruits—particularly Grapes and Pears—and vegetables were also exhibited extensively in the fine, big, well-lighted hall. M. Eugene Draps and his committee are to be congratulated upon the success of their efforts. During the three first days of the show the attendance was large, notwithstanding the wet weather. Severe pressure upon our space prevents us from publishing further comments this week, but we hope to give an account of the show in our next issue.

A New Disease of Mushrooms ?—In the issue for August 26 of our Berlin contemporary, *Die Gartenwelt*, a correspondent describes a fungus disease of Mushrooms which he believes to be a new one. The symptoms are a mass of tuberous growths which cover the upper surface of the Mushroom and also the stem, giving the impression that a number of small Mushrooms have grown out of the large one. Those who have seen the diseased Mushrooms incline to the belief that the pest, which is undoubtedly of a fungous nature, was introduced with the manure or with the earth; that it attacks the Mushrooms when young, becoming obvious only when they are full-grown. Or it may be that it is introduced by the Mushroom fly, which it is almost impossible to exclude completely even from the cleanliest and best-managed establishments. We understand that the writer of the note, Herr A. Janson, of Eisenach, Germany, has material at his disposal which he can send to any research station interested.

Mr A. H. Holmes.—One of the most successful of present day exhibitors at the larger exhibitions held throughout the country is Mr. A. H. Holmes of the West End Nurseries, Chesterfield, who still exhibits under the name of his father, Mr. William A. Holmes, who was an equally successful competitor in earlier years. Mr. A. H. Holmes was educated at St. Thomas' School, Chesterfield, and after leaving school he joined his father in the nursery business. At such an early age as seventeen years he showed an aptitude for exhibiting groups of plants for effect, and the first effort made by himself was at Tibshelf. Mr. A. H. Holmes and Mr. J. Cypher are very keen competitors at shows in the large classes for groups of plants, both flowering and foliage, arranged for effect, and they usually share the two first positions between them. In some seasons Mr. Holmes may stage so many as twenty of these large groups and such exhibiting, to be successful, needs an iron constitution, infinite patience and genius for arranging plants in a highly decorative fashion. Although Mr. Holmes had not such a long record as his friend, Mr. J. Cypher, he should have a long period of success in front of him, as he is only forty-four years of age. In addition to managing the nursery and seed business, cultivating stove and greenhouse plants, and arranging big groups, Mr. Holmes is also a frequent exhibitor in classes for bouquets and table decorations, while as a judge of all these subjects his services are greatly in request. Mr. Holmes is also extremely popular among his fellow competitors, not only because he is a naturally cheerful person, but because he can take second place—as he has to on occasion—without telling all and sundry that the judges have failed to do him justice.

MR. A. H. HOLMES.

Horticultural Exhibition at Louvain.—A horticultural exhibition organised by the Provincial Horticultural School, took place at Louvain, Belgium, on September 4, in the ancient press-house of the St. Gertrude Abbey, which has been restored and scheduled as an ancient monument. The weather was superb, and a large number of visitors was attracted to the show, which included some excellent vegetables, a great many flowers, and some magnificent Melons, Apples and Pears. A number of local dignitaries attended the opening ceremony, and a presentation was made to the Principal of the Horticultural School.

Importation of Potatos into Jersey.—The Ministry of Agriculture and Fisheries has been informed that the Committee of Agriculture of the Island of Jersey has prohibited the importation into the island of any Potatos of varieties which are susceptible to Wart Disease. Consignments of immune varieties must be accompanied, as before, by a sworn statement by the shipper, indicating the farm where the Potatos were grown, and declaring that no case of Wart Disease has occurred on the farm, and this statement must be supported by an official certificate that no case of Wart Disease has occurred during the past three years within a distance of at least 500 yards. Application for the issue of this certificate in connection with the export to Jersey of Potatos grown in England should be made to the Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W.1. A charge of one shilling is made for each certificate issued.

Geneva Horticultural Exhibition.—The Cantonal Horticultural Exhibition, organised by the Genevese Horticultural Union, which is always a very popular event in Switzerland, will be held this year from October 21 to 24 in the Geneva electoral hall. Among new features this season there will be six special classes for Chrysanthemums. The President of the Organising Committee will be M. John Vachoux, whose portrait we gave in our issue of July 30, p. 32, and the other members will be prominent figures in Swiss horticulture and public affairs.

Evening Horticultural Instruction in London.—A series of talks and lectures on gardening is to be given by Mr. E. H. Chitty, on Wednesday evenings, at the Whittington Evening Institute, Highgate, N.19, commencing on September 28. In association with the lectures, work will be done on the demonstration plot at Parliament Hill Secondary School on Saturday afternoons.

The Utilization of Marine Algae.—An interesting article in the September issue of our contemporary, the *Revue Horticole Suisse*, by Professor Lendner, describes the collection of Algae on the sea-shores of Brittany and Normandy, where they are known under the collective local name of "goémon." This rather vague expression includes quite a number of different Algae, green, red and brown, of which the last are in the majority and comprise the genera Fucus, Halidrys, Ascophyllum, Laminaria, and Saccorhiza. The Algae are useful for a variety of purposes. They are even used for food in the Far East, where agar-agar is prepared from Gelidium corneum, and used as a corrective to the too starchy diet. In Japan, Asak sanori, or Porphyra tenera, is used for the same purpose; but in Europe, only the very poor inhabitants of Scandinavia use the Algae as food, unless their use in confectionery (as gelatine) be considered as bringing them within the category of foodstuffs. Certain species of Laminaria, Fucus, and Alaria are, however, used as fodder for animals, mixed with bran. This material was tried during the war as a feeding stuff for the horses in the French army, and the results were found satisfactory. Perhaps the most common way of utilising the Algae, however, is by burning the weed and thus freeing the valuable chemical properties which it contains, such as iodine, bromine, nitrogen, potash, phosphate and sulphate of calcium, soda, magnesium, iron and manganese. The burning is done in the simplest and most primitive way; the weed is collected, carried inland, and there left in heaps, until the rain has washed away a good deal of the salt, and partial putrefaction has set in. The mass is then dried and spread thickly along the surface of a trench, which is dug previously and roughly bridged with slates at a little distance from each other, to ensure the circulation of air beneath the weed. It is then set on fire and allowed to smoulder, fresh weed being thrown on from time to time. When it is reduced to ashes, these are collected in sacks and sold to factories where the chemicals are extracted for commercial use. A good deal of the weed is, however, used in its natural state as a field fertiliser, and is considered one of the best. The deep-water Algae—which are known as "Goémon de fond"—are obtained from a boat, and are of superior quality; it it from them that a gum known as "algine" is obtained, which is used in the preparation of certain dress materials and hats, and also for binding coal dust in the preparation of briquettes.

Brighter London.—Bermondsey is doing splendid work in educating the inhabitants of this densely populated Borough of London to make the district more beautiful by planting flowers and trees wherever opportunity affords. It has a "Beautification" Committee which encourages the inhabitants of the poorer districts to cultivate their gardens, and those who have no gardens, to grow flowers in window boxes; in short, an effort to make London a more beautiful city than it already is. This Committee has only been in existence for a few years, but it has already done most valuable work; a flower, fruit and vegetable exhibition, held on the 8th and 9th inst., in the Town Hall, Spa Road, showed how successful have been the efforts of this Committee in stimulating a love of the beautiful in the Borough, for the whole of the large building was filled with creditable exhibits. At the opening ceremony, the Mayor of Bermondsey, Councillor George Catchpole, J.P., stated that there were over 600 local exhibits, as compared with 300 last year, and he proudly declared that no municipality in the metropolitan area could beat them, whilst they boasted that they had more street trees than any town in the world. The schedule included some eighty classes, the majority for plants and flowers, although some good vegetables were forthcoming, especially Red Cabbages, Parsnips, Beets, Tomatos and Beans. Mr. W. H. Johns, the Superintendent of the Public Parks, which were described in our issue of October 16, 1926, page 313, takes the keenest interest in the movement and he arranged a surprisingly good display of flowers from his department on a space measuring sixty feet by seven feet (Fig. 101). As will be seen on reference to the illustration, this was an exhibit worthy of any flower show, and he is to be congratulated on the excellence of the arrangement, especially as regards harmony of colour blending. The principal subjects shown by Mr. Johns were Dahlias, Gladioli, Lilium speciosum, Delphiniums, Pelargoniums, Marigolds, Coreopsis, with such foliage plants as Aralias, Maize, and Kochia scoparia for relief. Amongst the Dahlias he showed an apricot-coloured form of the Coltness Gem type, rather taller and freer than the well-known variety, named Bermondsey Gem. Messrs. H. J. Jones, Ltd., also showed Dahlias associated with Tritomas, Phloxes, Solidagos, etc., and Messrs. R. Neal and Sons, Ltd., had a splendid group of evergreen shrubs and another of Roses. Taken altogether the show was an earnest of the will of the people to respond to the appeal made to obtain a "Brighter London."

Aster-growing in the Ukraine.—The climate of the Ukraine, which is inclined to be hot during a fair proportion of the year, appears to be particularly suited to the growth of Asters, and to the development of new and improved varieties. One firm, Peter Lesewizky, has raised two new types of summer Asters. The "Comet" Aster, when grown in sandy soil, reaches a height of 70cm., with dark green, sappy foliage; the flowers somewhat resemble a Hercules Aster, and have been produced up to the present only in flesh tints. The second type, the Hohenzollern, produces a giant flower, greatly resembling a Chrysanthemum; the colours in this type are white, pink and blue.

Belgian National Centenary.—Although the centenary of Belgian Independence is still nearly three years hence—the country having been created an independent state in 1830—preparations are already on foot for celebrating the anniversary in a manner worthy of the traditions of the country. Everywhere associations are being formed to stimulate interest in the event, and to awaken in the inhabitants of the little country a desire to show it at its best to the inevitable influx of foreigners in 1930. The watchword of these societies is "La Belgique Fleurie en 1930," the idea being to display to the best advantage the horticultural proclivities of the people, and to decorate the entire country with flowers, from the railway stations and public buildings to the humblest cottage garden or tenement window. To this end, from 1928 onwards, the roads are to be put well into repair and planted so far as possible with fruiting and other ornamental trees; the railway embankments are to be tidied up and cleared of weeds; the untidy corners which in certain places disfigure the towns and villages are to be cleared, and kept clear; public buildings, such as schools, churches, hospitals, railway stations, etc., are to be ornamented with flowers and ornamental shrubs; the cemeteries are to receive particular attention, and local inhabitants are to be invited to assist in keeping them planted and tended; and all town dwellers are to be encouraged to keep their window boxes and balconies gay with flowers. There is to be a great deal of propaganda with a view to creating and maintaining the necessary enthusiasm for the idea of a Belgique Fleurie, especially in the schools and in the press, and it is to be hoped that if—as is scarcely to be doubted—the sustained efforts of two years result in a greatly enhanced love of floral decoration among the Belgians, it will not be allowed to die down after the immediate object of it, namely the centenary festival, has passed.

Appointments for the Ensuing Week.—Tuesday, September 20: Post Office Savings Bank Horticultural Society's show. Thursday, September 22: Ipswich Gardeners' Association's meeting. Friday, September 23: Staffordshire and Midland Counties Horticultural Society's show at Burton-on-Trent (two days). Saturday, September 24: Leigh-on-Sea Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Manetti Rose.*—I ought to apologise to your readers for omitting to give the very simple management required to make this a healthy stock. For dwarf Roses, the cuttings should be made ten inches long, all the buds cut off but two at the top of the cutting; they should be planted deeply, so that the two buds are just above the surface, and suffered to grow one season; the following autumn or spring they should be taken up, the two young shoots cut off close to the stem and transplanted, previously removing with the knife all the roots on the stem, leaving only the tuft of roots at bottom, and planting them about three inches deep, leaving seven inches out of the ground; the following summer, after the 25th of August, they may be budded, the buds placed *in the stem* (not in the young shoots), about four inches from the ground, the buds will grow rapidly the following summer, and care must be taken about the middle of June to cut off the stock above the bud, an operation called by nurserymen, "heeling," or "snagging" the wound will then soon heal over, and the junction will be perfect. For standards, cuttings one year old should be planted in rich soil, in rows three feet apart, and one foot plant from plant, suffered to grow one season, and then cut down close to the surface of the ground in February; several shoots will rise—leave three (if only one shoot is left, it becomes too full of sap, and breaks into numerous laterals); fasten one to a stake, and suffer the others to grow all the summer; early in the autumn remove the two wild shoots, the following summer the staked shoot will put forth many laterals. Cut off all those close to the stem within eighteen inches of the base, and allow the others to grow all the summer; bud in the stem at the height required, in August. *Thomas Rivers, Gard. Chron., September* 18, 1852.

Publications Received.—*Catalogue Méthodique et synonymique des variétés de Pommes de Terre*, by Henri-Louis de Vilmorin, fourth edition, revised; Vilmorin-Andrieux et Cie., 4, Quai de la Mégisserie, Paris.—*Dahlien und Gladiolen* by Herm. A. Sandhack; Paul Parey, Hedemannstrasse, 10 u. 11, Berlin; price Rm. 22.—*Root Development of Vegetable Crops*, by John E. Weaver and W. E. Bruner; McGraw-Hill Publishing Co., Ltd., 6 and 8, Bouverie Street, E.C.4; price 20/-.

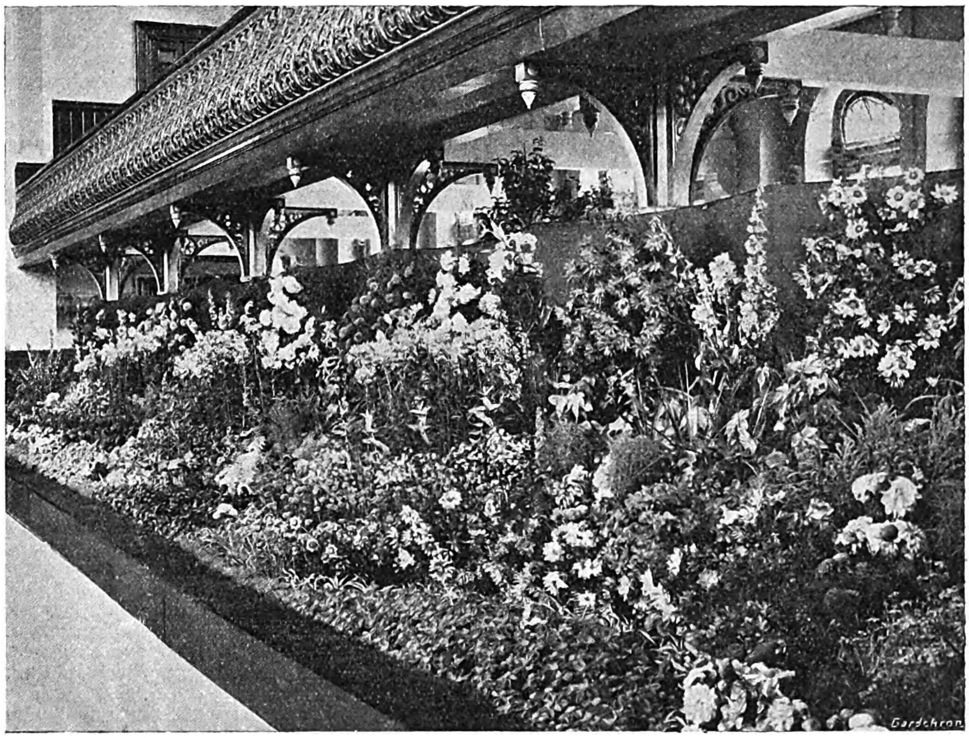

FIG. 101.—BERMONDSEY FLOWER SHOW: AN EXHIBIT ARRANGED BY THE PARKS DEPARTMENT.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Cool-house Orchids.—The various members of the cool Orchid house include both species and hybrids of the genus Odontoglossum, and the hybrid families Odontioda, Oncidioda and Wilsonara. These Orchids include many charming plants of graceful appearance which are valuable when in bloom for affording a bright display in spring and early summer. They are also adapted for supplying cut blooms, as their graceful inflorescences lend themselves to all forms of decoration. Late summer and early autumn are generally regarded as the best seasons for attending to the roots of these plants, the longer and cooler nights and moist atmospheric conditions prevailing at those seasons affording conditions favourable to their re-establishment. Wherever it is possible, the best time to repot Orchids is after that period of inactivity which follows flowering, when the plants again start into growth, and the new growths commence to push forth new roots from their bases. If these roots can be anticipated, so much the better, as there is then no danger of any being broken during the operation of re-potting. When the compost is in good condition the plants may be shifted, if they have previously occupied small pots, without disturbing the roots much, merely picking out the sides and disentangling the roots, for it is bad practice to place any plant in a larger pot in a solid mass. Larger specimens growing in sour compost should have the old material carefully removed, and be repotted in the same sized pots, or even smaller ones, according to the roots.

Compost.—The potting material best suited to these plants is a compost of a soft nature, similar to that used for Miltonias. It is essential that the pots be well-drained to ensure a free passage of water, and in no case should the plants be overpotted. It is also advisable to remove all rootless, leafless, back, pseudo-bulbs. Plants that can be transferred to larger pots without involving much disturbance, should be placed by themselves, as they need special care in watering, for not having disturbed the roots much they will naturally need more moisture than those that have had the old compost removed. Watering the latter should be done with great care, for only sufficient moisture is needed to keep the compost moist, as roots extend more quickly in a partially dry compost than in one which is very wet. The plants will require to be shaded in bright weather, and weak and badly-rooted plants should be placed in the shadiest part of the house, while those with plenty of roots can be arranged with those that do not need repotting. The small-growing Odontoglossum Cervantesii, O. Rossii, O. Oerstedii, and others which received attention sometime since, are best grown suspended from the roof-rafters, while the larger-growing members of the family are best arranged on the stages. The dull, sunless weather of this summer has been to the advantage of these cool, moisture-loving plants. Proper atmospheric conditions are of primary importance, therefore judicious damping of the bare surfaces in the house and constant attention to ventilation are important details of cultivation.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Turnips.—There is yet time to make another small sowing of Turnips. The plants will form only small roots but will withstand the winter well.

Spinach.—There is still time to make a last sowing of this useful vegetable, especially of the prickly-leaved or Winter Spinach.

Cucumbers.—Where Cucumbers are cropping in cold frames every advantage should be taken of solar warmth, by closing the lights as early in the afternoons as possible, and covering them with mats at nights. Do not damp the foliage on cold days, and only very lightly on warm ones. The roots will not require much water now that the days are growing shorter. Keep the growths well-thinned and stopped regularly. When watering, a little stimulant should be used, either in the form of liquid manure or some quick-acting artificial sprinkled on the soil and watered in. Cucumbers growing in heated houses for winter cropping should have their growths trained thinly and kept as sturdily as possible or trouble will arise when cold weather sets in. Do not overcrop the plants or growth will soon become weak and the plants cease to bear. Keep the atmosphere humid, and maintain a night temperature of about 65°. Light top-dressings of rich loam mixed with bone-meal and a small quantity of leaf-mould or manure from an old Mushroom-bed, may be given with good results. Feed the roots with liquid cow manure at alternate waterings supplemented by a good fruit manure, or one especially prepared for Cucumbers. Keep a sharp watch for white fly, and so soon as the pest is detected, vaporise the house with a reliable fumigant. Thrips and red spider should also be watched for and destroyed.

Hoeing.—The ground between growing crops should be stirred as frequently as possible with the Dutch hoe, especially between late-sown crops, as the heavy rains of late August have caused the soil to settle hard, in some instances almost like cement.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Perpetual Carnations.—Where these plants are growing in pits or frames they should be brought into their winter quarters at once, but, before doing this, the house in which they are to be grown should be thoroughly cleansed. The shingle on the plant stages should be washed also, and the walls lime-washed. The importance of cleanliness cannot be stressed too much, especially where Carnations have been grown in the same house during the past year. The receptacles in which the plants are growing should be washed, and the sticks or canes previously used for supporting Carnations soaked in a strong insecticide before using them again. Where a light permanent shade has been applied on the glass for the summer occupants of the house this should be removed. After housing the plants, admit an abundance of air for the first few weeks, and if the plants are well supplied with flower buds, weak stimulants should be given the roots on frequent occasions. Where red spider is in evidence the plants should be syringed with two ounces of common salt in one gallon of water, taking car to wet the underside of the foliage with it.

Richardia africana.—Arum Lilies growing in the open in good soil should be lifted and either planted out in borders in a house specially suited to them or placed in pots. Where the spathes are in demand for use as cut flowers, the plants may be grown in borders or large pots. The Richardia is a gross feeder and requires a rich compost. A fairly retentive loam mixed with well-decayed cow manure is suitable. Where this plant is used for decorative purposes in pots they may be grown in receptacles six inches or seven inches in diameter, but when such small pots are used the plants will require liberal supplies of diluted liquid manure when in full growth. Others that are to be grown in borders should have the compost made fairly firm about their roots at the time of planting them. Extra care is necessary in watering until the plants are growing freely, when they may be watered freely.

The Stove House.—With the approach of autumn it will be wise to give the occupants of this house some attention. Cleanse the house and also the plants. Climbers should be detached from their supports, cleansed thoroughly and the growths thinned, if necessary. Caladiums, Gloxinias, etc., are past their best and may be removed from the stove and gradually dried off. Crotons, Dracaenas, and any other plants that need more pot room, should be attended to forthwith, so that they may become established in the new soil before the advent of winter. Young stock of edging plants, such as Panicum variegatum, should be propagated to take the place of old plants that have done service through the summer. Exposure to sunshine is necessary to obtain rich colours in Codiaeums, and, unless the weather is exceptionally bright, shading may be discontinued.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Wall Fruits.—In gathering Peaches, Nectarines and other fruits of a soft texture the utmost care should be taken not to bruise them, as the least injury in this respect quickly sets up decay. The fruits should be gathered a little under ripe, when perfectly dry, and placed in boxes, resting each fruit on some soft material. They should be placed in a well-ventilated fruit-room until they are perfectly ripe. If Peaches are required for bottling, examine the trees at intervals and gather fruits of a medium size, handling them as little as possible, for the least bruise will discolour the flesh and spoil their appearance when bottled. So soon as the trees are cleared of their crops, cleanse the foliage. If red spider has been troublesome wash all parts of the trees with an insecticide. Remove all sub-laterals and, if the crop has been a heavy one, examine the roots to ascertain if they are dry. If moisture is necessary, soak them thoroughly with clear water, or, better still, with liquid manure. When planting young trees do not overlook the merits of Peach Peregrine, a most useful, highly coloured variety of good quality. Other varieties to be recommended are Hale's Early, Rivers' Early York, Dymond, Stirling Castle, Bellegarde, Violette Hâtive, Barrington and Nectarine Peach. The following are good sorts of Nectarines: Cardinal, Early Rivers, Elruge, Dryden, Spencer, Pine Apple, Humboldt and Violette Hâtive.

Late Plums.—See that the fruits of late varieties of Plums are well protected against attacks by birds. Blackbirds are amongst the first to peck the ripest fruits, and, if not prevented, quickly destroy the best specimens. Wasps also are usually very troublesome, and their nests should be hunted for and the wasps destroyed, either by pouring tar in the entrance of the nest at night time, or by cyanide of potassium. About an hour after a little of the cyanide has been poured into the entrance of the nest, the latter may be dug out and the grubs destroyed. This year Coe's Golden Drop, Jefferson's, Oullins Golden Gage, Washington, Victoria, Early Prolific and Denniston's Superb have cropped best in these gardens. Farleigh Prolific, Bradley's King and Merryweather Damsons have yielded well. The fruits of the last are very large in size, black, oval and of exquisite flavour; it is probably the largest and the best flavoured Damson in cultivation.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Early Figs.—Trees that are intended to be started into growth in November or December must not be allowed to grow too strongly or the early crop next year will be unsatisfactory. Trees with their roots in confined spaces are not difficult to deal with, but a brick wall will not always prevent the roots from growing under and getting out of control. I prefer to grow the roots in a small space enclosed by turf walls which can be forked down and rebuilt annually. Three or four feet square of compost resting on a foot of drainage will support a very large Fig tree for a great number of years, and when the old fermenting material and soil is removed it soon becomes dry and the wood ripens quickly. Rather light, calcareous loam mixed with old lime rubble, broken bricks, burnt clay and charcoal suits the Fig and such soil will take unlimited supplies of water. It is not necessary to disturb the whole of the ball of the tree, but the retaining wall of turf and a little soil should be removed annually in September, and the soil made up afresh. Unless the compost is very dry, little water will be necessary now, but care must be taken that every part is properly moistened before starting the trees into growth, and fermenting materials should be applied in November.

Cucumbers.—If any old plants now in full bearing show signs of deteriorating, they should be cut over by degrees and encouraged to develop fresh growths. The secret in restoring old Cucumber plants lies in a great measure not only in clearing off nearly all the fruits and faulty leaves, but also in stimulating the roots by the addition of fresh, rough compost, and the renovation of the fermenting materials that provide bottom heat. A compost of light, rich turf, free from worms, well mixed with old lime rubble, bone-meal and a dash of soot, should be prepared and placed in a warm, dry corner for future use as wanted. The compost will improve by keeping, and it should be used as a top-dressing, a little and often. No hard and fast rule can be laid down for watering, for some may be grown over hot-air chambers, whilst others derive a great deal of moisture from the hot-bed. Sufficient tepid water should be given to penetrate to the lowest roots, and keep them in a moderately moist condition. Autumn and winter plants growing in pots plunged in moist fermenting materials also derive a great deal of nourishment from the bed, but the root-run being limited, weak liquid manure, guano in solution, and soot-water should be used freely. Direct syringing will soon be unnecessary, but plenty of atmospheric moisture should be promoted and a brisk bottom heat of 80° maintained. If young plants are to be planted where late Melons are growing, hasten the development of the latter. The winter crop of Cucumbers should not be grown near the hot-water-pipes, or planted too closely together. Make the ball of soil and roots thoroughly moist before the plants are turned out of their pots, and when planting them pack warm soil about the roots and give the latter a little warm water.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Ranunculus.—The various species of Ranunculus were at one time very popular in gardens, but they are seldom grown now, which is somewhat surprising, considering the beautiful display they make in beds and borders; they are also ideal for furnishing a supply of cut flowers, the French varieties being especially good for this purpose. On warm, well-drained soils, Ranunculus may be planted next month, but on cold, wet soils it is wise to defer planting until February. These bulbous plants should be grown in rich, well-manured soil, and it is an advantage to prepare the sites for planting some time in advance, and to incorporate plenty of well-decayed manure in the ground. Where necessary, the beds or borders should be raised somewhat above the general level. The dry, claw-like roots should be planted six inches apart and about three to four inches deep. For a supply of cut flowers they are best planted in the nursery or reserve garden.

Buddleia variabilis.—There are several fine varieties of this flowering shrub which flowers at a time when most shrubby plants are over; it is equally effective as a single specimen or grown in large groups in shrubberies. The best results are obtained when the plant is pruned hard back during the spring; it then makes strong shoots that terminate in great sprays of flower. This method of pruning is most effective for a number of other shrubs flowering at this time, viz., Hydrangea paniculata var. grandiflora, Tamarix petandra and Ceanothus Gloire de Versailles. The Buddleia may be readily propagated at any time during the summer by means of twiggy, half-ripened, side-shoots, which root readily under a hand light either out-of-doors or in a cool house. The Tamarix is best propagated towards the end of October, when cuttings of the current year's shoots may be lined out in a sheltered border in the same manner as Gooseberry cuttings.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Violets.—If Violets are required in the coming winter the plants should now be transferred to frames having a southern aspect. The soil should consist of a mixture of old loam, leaf-mould and well-rotted manure. Place the compost in the frames to within twelve inches of the light for the taller varieties such as Princess of Wales, and still nearer to the sashes for the Neapolitan and dwarfer kinds. Previous to lifting the plants, if the weather is dry, soak the roots with water and run a spade around each plant a day or two before lifting actually begins, when it will be found that the plants will experience very little check, and when well watered in their new quarters soon recover and grow freely again. Do not crowd the plants in the frames; a minimum distance of twelve inches should be allowed between the stronger-growing varieties, while the dwarfer kinds may be put from six inches to eight inches apart each way. Shade the frame during hot sunshine for a few days, and spray the plants frequently, in preference to heavy waterings, if they show signs of distress. Admit plenty of air night and day while the outside temperature remains warm.

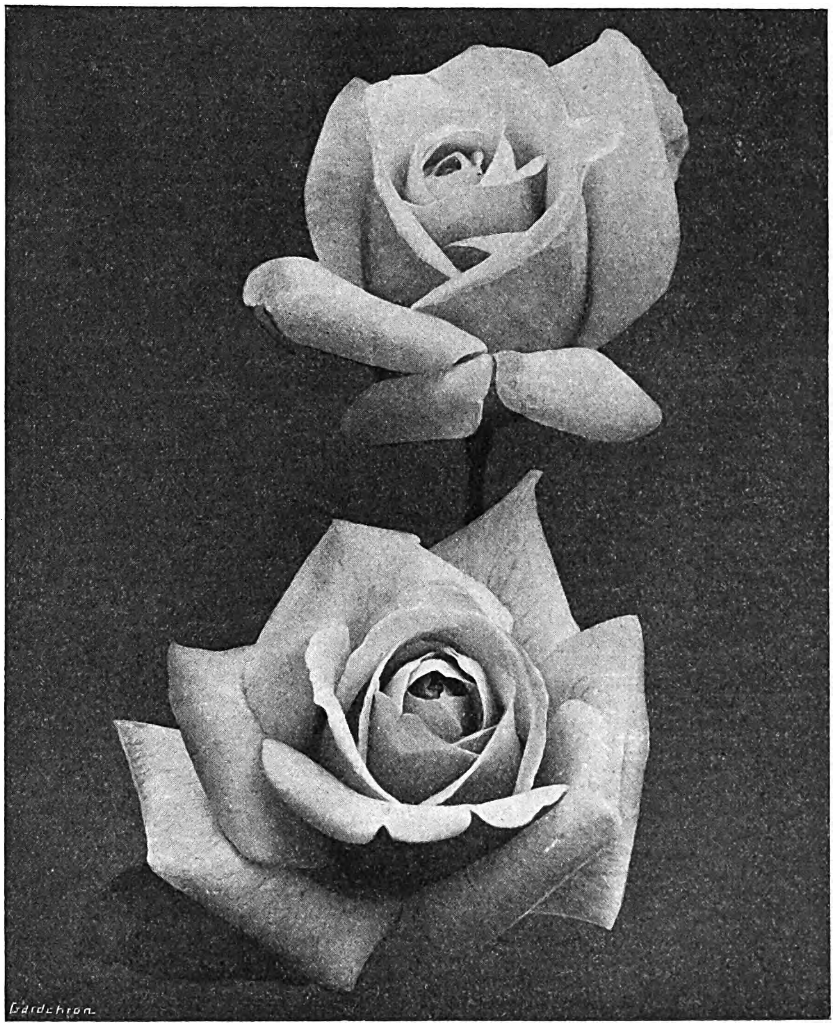

FIG. 102.—ROSE POLLY.

(See Awards by the National Rose Society, p. 236).

Climbing Plants.—Some of the earlier-flowering climbers, such as Wistaria and Clematis montana, which have filled their allotted space, may have their long, straggling shoots shortened to a few buds. This refers particularly to Wistarias which throw out these annual growths in profusion, and flower very satisfactorily on spurs. Where there is still room for the extension of the plants the leading shoots should be nailed or tied in position and only the points of these shoots removed. Clematis montana and its variety rubens should only have their excessive growths thinned carefully, where they are inclined to become entangled, leaving a sufficiency of their trailing growths, which next season should be studded with flowers. Climbing Roses should have the old wood removed and the young shoots, which are to provide next year's crop of flowers, tied to their supports, removing all weakly and unnecessary shoots in the process, so that the remaining ones may have every opportunity of becoming ripened during the autumn. The Wichuraiana hybrid Roses are easily propagated from cuttings, and these should be selected as the above work proceeds, labelled and inserted in nursery rows, placing an inch or so of sand for the base of the cuttings to rest on. This season the following varieties have been outstandingly good: American Pillar, Excelsa, Una, Shalimar, Blush Rambler, Dorothy Perkins and its white-flowered sport, White Dorothy.

Hoeing.—As the season advances, in some gardens the Dutch hoe is laid aside or forgotten, but it is still necessary to use this useful implement to aerate the soil between rows of recently-sown or planted crops. Weeds are still very numerous, and the frequent moving of the soil will keep these in check.

FLORISTS' FLOWERS.

A BORDER OF CARNATIONS.

I VENTURE to publish what may prove to be an unbeatable record of the floriferousness of a variety of the border Carnation! The border is in Councillor Crick's garden, Church Street, Ampthill. The variety is Feltham Scarlet, one of the hardiest, freest-flowering of border Carnations ever sent out, and the number of spikes are, approximately, 2,700. The border is eighteen yards long, and I arrived at my figures by marking off and counting a few yard-lengths separately. In practically every instance there were 150 spikes to the yard. The Carnations were three years' or four years' old and numbered fifty-four to fifty-eight. The plants are planted so as to overhang a brick wall two feet high by nine inches wide, the aspect being west. A sprinkling of soot is the only aid these plants have had. I believe the gardening world owes the introduction of this grand Carnation to the foresight of the Messrs. Thomas Ware of the Feltham Nurseries, Middlesex. *C. Turner.*

EXHIBITION CHRYSANTHEMUMS.

SWELLING flower buds that are to perfect the huge show blossoms indicate the approach of Chrysanthemum shows and that growers will very soon reap the reward of months of careful cultivation. Eight weeks from bud to opening flower seems a long period, yet highly developed specimens take this time.

The orthodox number of blooms to a plant of the Japanese varieties was for some time three; bold spirits reduced this to a pair, and still bolder attempted but one. To-day concentration can go no further, and an advance in size of flower is a remote possibility. Take at random a dozen sorts that include Ajax, Louisa Pockett, Majestic, Mrs. G. Drabble, Mrs. Harold Wells, Mrs. R. C. Pulling, Mr. Thos. W. Pockett, Norman Chittenden, Queen Mary and William Turner; many of these have had a long period of popularity and are still in the front rank. Some of them, indeed, have given a similarity of type with a change in colour.

The close, ball-shaped, incurved sorts occupy a small place in the background and are not likely to be revived unless there arises some young cultivator who will give the patience required to combine cultivation with "dressing." It seems strange that this art of "dressing" is almost dead, especially as there are better varieties available now than formerly.

A producer of plants for sale can gauge the general interest in the different styles of Chrysanthemums as well as most folk, and from this standpoint the demand for single-flowered ones, although fair, does not as yet prove a great advance; for exhibition uses these have, indeed, a long way to go before they will oust the Japanese varieties from the show board. Pretty as they are, the singles fail to produce that spirit—the desire to excel in their culture—as do the double forms. In regard to the former, however, recently-raised varieties are so beautiful and such an improvement in size, as well as in colouring and substance, that there is no knowing what impetus they will provide when in the hands of growers generally.

Giant plants of Chrysanthemums are not popular for show purposes, but the medium-sized varieties could, I think, easily be grown for competitive purposes.

Knowledge is limited in regard to the marvellous productions of the more skilful growers for market; these growers turn out perfect flowers and they are fastidious as to stem and leaf, poise of bloom on the stem and, indeed, all that pertains to the useful and ornamental in Chrysanthemums. Were this style exploited as it should be the something fresh which is always needed in regard to exhibiting would be likely to be forthcoming and add interest in future arrangements.

Trade growers are in the habit of using the type of flower referred to, and from the point of view of the public this may be quite as pleasing as "big" blooms. The old form of showing groups of pot plants is not on the increase; such groups are too formal for modern tastes. It is a surprise to the writer that so little is done in the way of exhibiting for competition cut blooms of the most generally popular class of all: I mean varieties that are grown in the open ground. Before the great upset in 1914, there were occasions when early-flowering Chrysanthemums were prominent at shows, and now, at a period when varieties are infinitely superior to the old ones, there seems a difficulty in getting growers to cultivate them seriously for the purpose. To manage these "just for cutting" is useful in a way, but numbers of gardeners have no conception of the capabilities of these garden kinds as grown for exhibition. Trade growers lead again, in this instance, as they do in what are known as double decorative varieties.

Exhibition Chrysanthemums have, for upwards of fifty years, held the attention of gardeners as few other flowers have, and the desire to excel need not begin and end with the giant flowers, considering the wealth of variety now available. There is room for the huge examples, of course, but still more for those that are more generally useful.

What of the prospects of the present year? For some weeks the roots of the plants were in a semi-saturated state owing to incessant rains. This is all very well from the point of view of labour saving, but is not conducive to good results. As I write, however, a change has come about and sunshine is playing a rapid part in ripening the growths, and, should this fine weather continue for a reasonable time, cultivators of the plants should be able to record a season favourable, on the whole, to excellent results. *H. S.*

ALPINE GARDEN.

VERONICA PECTINATA ROSEA.

THERE is such a wealth of Veronicas in the various sections, both shrubby and herbaceous, that it is most difficult to make a selection, and, even among the herbaceous species and varieties suitable for the rock garden, the selection is exceedingly troublesome. A trailing species of merit is V. pectinata, which is said to be plentiful over a wide area in Asia Minor. The typical plant has pale blue flowers, but the type is seldom seen in British gardens, and the species is usually represented by the rose-coloured variety, V. p. rosea. I have hunted through several catalogues of our largest dealers in such plants and have failed to find more than one offer of the typical form, but the rose one is fairly plentiful in commerce. This Veronica is of moderate growth and excellent for hanging over rock work or banks. It has hoary, velvet-like leaves, which form dense mats, and the stems bear a number of pleasing rose flowers. The plant grows wild in shady places, but does not object to sun in our climate It may be grown in loam, sand and leaf-soil or peat. Propagation is best effected by cuttings, or careful division of the rooted portions. I am not aware of seeds of this plant being offered for sale.

DIANTHUS SEGUIERI.

THIS Dianthus blooms after practically all the other Pinks have finished their flowering season. It blooms even well into autumn—a time when flowers become scarce and consequently more precious in the rock garden. It may be grown and flowered well even on shady banks in the rock garden. Its cultivation is simple; it will grow in any fairly light garden loam, although the addition of a little leaf-soil and sand is an advantage. D. Seguieri is a plant of moderate stature, as it grows only about nine inches high. It has long, rather grassy leaves, and a few of these appear also on the stems, which bear generally one, but sometimes two or three flowers each. The blooms are of a brilliant magenta colour with a purple eye which appears to tone down the other colouring.

This Dianthus is quite hardy and perennial, and may be increased by cuttings or raised from seeds sown in shallow drills in the open in May or June, or under glass earlier.

SAXIFRAGA COTYLEDON CATERHAMENSIS.

SAXIFRAGA Cotyledon, in all its forms, is a most welcome plant in any garden, and at one time it was frequently to be found in the windows of many a rural cottage, where its rosettes of leaves and noble plumes of flowers gave a feature to the home.

The variety caterhamensis has long, shapely rosettes and noble, arching plumes of white flowers, handsomely freckled with spots of crimson. It is uncertain where the variety originated, but it came into commerce after being seen in a Caterham garden. It is, I consider, even superior to that magnificent form of S. Cotyledon called islandica. S. C. caterhamensis is in commerce, and should be secured by all lovers of the taller silver Saxifrages. *S. Arnott.*

CAMPANULA VIDALII.

This uncommon Campanula, native of the Azores, is an excellent rock plant for mild localities, for the alpine or cool house in colder areas.

A warm, sheltered spot is necessary with medium-textured soil containing a good supply of humus. Given these conditions, it will form a stout, woody stem, bearing at the top numerous spoon-shaped leaves.

In August these produce twelve-inch racemes of heavy, white flowers, looking like numerous Japanese lanterns, having a distinct waist-line. An established plant will produce up to twenty stems, each bearing about fifteen flowers open together. *L. Le C. J.*

CYTISUS KEWENSIS.

THIS beautiful hybrid Broom is of prostrate habit and ideal for planting in the rock garden, where it will hang over the face of a rock, like a miniature cascade; it is also suitable for growing on a sloping bank.

During April and May the slender, pliant branches are densely clothed with cream-coloured flowers which remain in good condition for a considerable time.

Cytisus kewensis is quite hardy and presents no difficulties in cultivation, for it succeeds well in most garden soils but prefers a rather light, sandy medium.

This hybrid Broom was raised at Kew, the parents being C. Ardoinii and C. albus. *T. H. Everett.*

SILENE SCHAFTA.

THIS dwarf Silene flowers at this season of the year when most alpines are over, and is most effective when massed. It should be planted in a warm, sunny position in moderately light, loamy soil. Under these conditions it will form carpets of branched, leafy growths up to about six inches in height, which in late summer are absolutely covered with large, bright, purplish-rose flowers. It is a free grower and one of the easiest of rock plants to cultivate.

Seeds offer by far the best method of increase, as spring-raised plants will flower well in the same year; cuttings may be rooted in sand under a bell-glass or in a cold frame, if seeds are not available.

LIPPIA NODIFLORA.

PLANTS which produce their flowers late in the season are always of value in the rock garden especially if they are of dwarf stature. Lippia nodiflora is a dwarf, creeping perennial from the warmer parts of North America. It forms dense mats of oppositely-branched growths which produce roots at almost every node, and are clothed with cuneate or spathulate, light green leaves, half-an-inch or so in length, with the margins toothed on the upper half.

The small flowers, opening rose-purple and fading to white, are produced during August and September in dense heads on slender, erect stems, two inches to six inches long, and arising from the nodes along the main growths. The plant is a rapid grower and free bloomer, and should be grown in light, sandy soil in a sunny position. Unfortunately, it is not quite hardy and often perishes during the winter, so that it is advisable to establish some of the rooted shoots in pots during late summer and to winter them in a cold frame. *A. G. F.*

FLOWER GARDEN.

PHYGELIUS CAPENSIS.

Two years ago, a friend gave me a few half-ripened cuttings of Phygelius capensis which I managed to root successfully in a cold frame in July, and they have just rewarded me with a most delightful show of blossom.

This plant is also known as the Cape Figwort; it is a native of South Africa, and belongs to the Order Scrophulariaceae. There are only two recorded species of this genus, and P. capensis appears to be the only one which has been introduced. The plant is not perfectly hardy in exposed districts, but here, in Hertfordshire, it has survived so many as 21° of frost without protection last winter. The derivation of its name would appear to indicate that it is a shade-loving plant, but I have found that it succeeds and flowers well in light, rich soil where it receives full sun from mid-day onwards.

It is erect in growth, and makes a neat shrub, three feet high; the leaves are glabrous, two to three inches long, ovate-lanceolate in shape. The flowers are very conspicuous in colour, form, and the manner in which they are borne. They are disposed in terminal panicles, each peduncle carrying three to seven flowers on slightly recurved pedicels. The corolla is one-and-a-half inch long, tubular, and inclined to be incurved or slightly erect and constricted above the ovary. The flowers are orange-scarlet outside with a touch of crimson around the five-toothed margin, and golden-yellow inside. The filaments are crimson, flattened, and slightly longer than the corolla, the thin tubular style being half as long again.

The plants set an abundance of seeds which may be easily germinated in moderate heat in spring. *R. K.*

NEPETA MUSSINII.

This Sage deserves to be regarded as one of the best plants in the garden. It grows well in almost any soil and situation and furnishes a continuous supply of flowers over a very long period. The inflorescences are useful as cut flowers, while even the foliage of the plant is attractive. This Nepeta may be used as an edging for a border, for planting in the rockery, on a dry wall, or for massing in the hardy border. Old plants may be divided in autumn or spring, and even so late as the flowering time, though this is not advised. As your correspondent, on p. 27, states, cuttings may be rooted now. My object, however, in penning this note is to draw the attention of readers to the fact that it is possible to root cuttings in the spring to provide plants for flowering in the summer. I have done this for two successive years. Last year I had occasion to plant some beds of Roses, each large bed accommodating about 150 plants at two feet apart, and I wanted something to give colour to the bed, apart from the Roses, which were not expected to make a great show the first year. As I required about 1,000 plants to set between the Roses and to provide an edging to the bed, I was somewhat puzzled to know what to use, and eventually decided on Catmint, provided that I was able to root it in the spring. A few cuttings as an experiment soon decided the matter, and I inserted them in pure sand in a propagator in a vinery. The cuttings were merely snipped off with a small pair of scissors above and not below a joint, so that they were internodal cuttings. No further preparation was given and they were inserted in the wet sand on March 6. In due course they were boxed up and planted in the beds on April 30. They all grew well, so much so that during July they had made so much growth that I was obliged to clip them back to prevent them from smothering the Roses. The latter were planted two feet apart, and a plant of Nepeta was set out in the centre of the square formed by four Roses.

This year, also, I had occasion to need some Catmint for an edging, and rooted cuttings towards the end of March. Later, on April 11, I put in some more and was able to get these boxed from the propagator a week later and to plant them out on May 10. Now they have formed a dense line and are flowering nicely, but will improve.

Few, indeed, are the plants which can be grown from the cutting to the flowering stage in less than three months, and when planted at more than a foot apart to meet in that time.

I have used Nepeta Mussinii in connection with Antirrhinums and Sweet Peas, also with Sweet Peas and the beautiful Sweet William, Pink Beauty. In the border the blue of the Catmint harmonises well with the yellow of Calendulas Orange King and Lemon Queen, and I cherish a hope some day of associating it with columns of such Ivy-leaved Pelargoniums as Madame Crousse and Charles Turner. *William F. Rowles, Wroxham Hall Gardens, Norwich.*

VERBENAS.

Time was when Verbenas were cultivated largely for exhibition purposes, but this was so long ago as when Henry Eckford, Richard Dean and other florists were powers in the land. At that time, and even later, Verbenas were also grown for summer bedding effects and plants were pegged down with great regularity. The results under good cultivation and after much patience were excellent, but at the present time few people would give the time necessary to produce such results.

However, modern strains of Verbenas have been so improved in so far as vigour and freedom of flowering are concerned—as witness the variety Miss Willmott, which is grown extensively as a pot plant for Covent Garden Market—that pegging down is neither necessary nor desirable. In the flower garden modern strains of Verbenas grow freely and are allowed their freedom, although a few short, twiggy branches are often placed among them to afford the little support they need. Under these conditions they are worthy of a place in the flower garden as indicated in Fig. 103 which represents a group in one of the borders at Waterlow Park in North London.

It is hardly necessary to state Verbenas are easily raised from seeds, and that the propagation of selected varieties by cuttings affords no real difficulty. *K.*

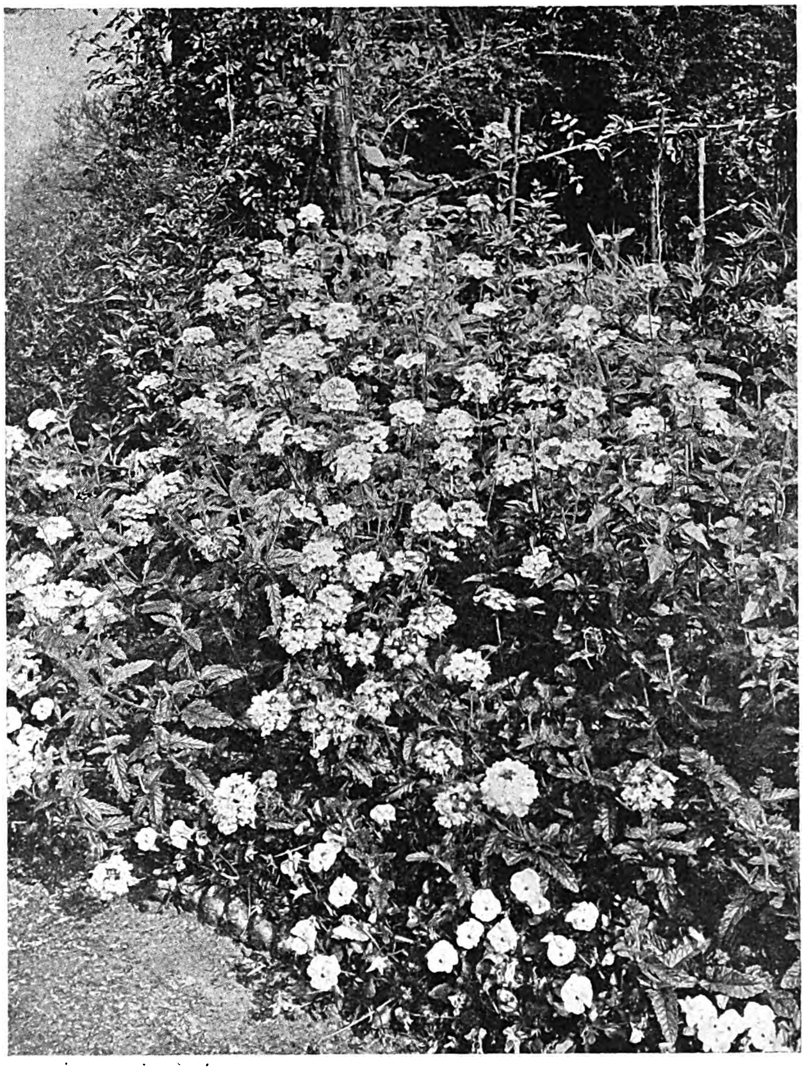

FIG. 103.—VERBENAS IN A FLOWER BORDER.

HARDY FLOWER BORDER.

HELENIUMS.

These well-known summer and autumn flowering herbaceous perennials add much to the brightness of the borders at this season when their masses of rich yellow-orange, crimson-striped and blotched flowers make an attractive display. The introduction of new and improved varieties in recent times has added considerably to the usefulness of the genus, and the autumn-flowering section is particularly valuable.

All Heleniums are of easy culture and thrive in various types of soils, although they do not make strong growth on light, sandy soils, unless these are heavily manured when preparing the borders for planting. It is necessary to divide the clumps frequently or they become crowded, lose vitality, and give only small, thin growths and flowers of inferior quality. As the stems and foliage are rather heavy, some kind of support will be necessary for the taller-growing varieties, therefore staking should not be neglected.

The dwarfer kinds are usually the earliest to flower, and amongst these H. pumilum is popular because of its dwarf habit and rich yellow flowers, which make it a good plant for permanent beds. H. p. grandiflorum is a fine and vigorous form with larger flowers, but it is considerably taller in growth. H. Bigelovii is also a very effective, compact-growing species, producing its rich golden flowers with great freedom. Crimson Beauty is one of the best of the dwarfer varieties and an exceedingly fine plant with deep, brownish-crimson flowers. It is also of very sturdy growth and rigid habit, and stands up well without supports.

Of the taller-growing kinds, H. autumnale and its variety grandiflorum are well worth growing, their large, yellow flowers being very showy and excellent for cutting. H. a. rubrum is a highly attractive plant, with large, deep, mahogany-crimson flowers which give it a rich, warm tone. H. striatum is a showy and distinct autumn-flowering species, bearing massive, branched heads of deep orange flowers, striped with crimson. Riverton Gem is also a fine variety and a robust grower, the flowers being rich terra-cotta suffused with old gold. *A. P. C.*

A FEW USEFUL SALVIAS.

THE genus Salvia is a very large one, embracing stove, greenhouse, hardy perennial and annual species. Some of the greenhouse species of a shrubby nature are useful for growing against low terrace walls in the milder parts of this country. Few of the South American species are really hardy in the open with us, but many of them are worth growing for the decoration of the conservatory or greenhouse during autumn and early winter. The hardy herbaceous species are valuable plants where room can be found for fairly large groups, for they provide a bright display over a long period and will grow well in any good garden soil, provided it is well-drained.

Probably the most common Sage planted in herbaceous borders is S. virgata nemorosa. This is a very free-flowering plant and continues to bloom over a long period. It grows from two feet to three feet high and produces flowers of a reddish-violet colour. Where large numbers of bedding plants are required annually this is a valuable plant, being easy of propagation, either from cuttings or division, according to the stocks available and the number required. Where this Salvia is planted in large masses, a fine effect is produced by using the silvery-grey-leaved Cineraria maritima as a dot plant amongst it.

S. argentea has large, silvery leaves and tall, branching spikes of white flowers. It is a striking plant and should be included in all collections of hardy plants. It is worthy of a prominent place near the front of the border where the large, silvery leaves, which are often from twelve inches to eighteen inches long, may be seen to advantage.

S. turkestanica produces tall spikes covered with pink-coloured bracts, and is a useful subject for the larger borders. In good soil this species attains a height of seven feet to eight feet, and is effective for a considerable period; it is also useful for grouping in large shrub borders where room is available.

The native S. pratensis has bright blue flowers, but many forms of this plant are to be met with, some with flesh-coloured flowers others rosy-pink and some white.

S. dichroa from the Atlas Mountains is a splendid plant for the milder districts, growing from six feet to eight feet high, with racemes of flowers two feet to three feet long. The colour of the upper part of the bloom is bright blue, the lower lip pale blue, the middle lobe white. This species has the habit of commencing to grow during late autumn and the young leaves are liable to be cut by frosts, but as the plant is seldom damaged beyond recovery, it is worthy of extended trial.

S. officinalis, the Common Sage, is well-known, but the fine form, S. o. purpurea, is not common in gardens. This is a free-growing plant of a dwarf, shrubby nature with highly-coloured foliage which makes an outstanding mass of colour in either the shrubbery or herbaceous border. It is especially effective when planted in association with or near by some clear yellow flowering plant or shrub.

S. azurea, a native of North America, has deep azure-blue flowers; the plant grows about four feet high and blooms during September and October. There is a white-flowered form of this species, but it is not so attractive as the type. S. farinacea is a beautiful plant from Texas bearing violet-blue flowers, while the flower spikes are lightly covered with a white powder which adds to the attractive appearance of the plant. On light, well-drained soils this Sage is hardy, but in case of doubt it is worthy of the protection of a cold frame or greenhouse during the winter.

Salvias that need the protection of a frost-proof house or pit during the winter include S. Pittieri, a valuable species from Costa Rica. It is easily propagated from cuttings which soon make good plants in favoured districts. S. Pittieri may withstand the winter in the open. The flower spikes are from eight inches to ten inches long, and the blooms of a rich blood-red, with a velvet-like texture; a plant in bloom is a blaze of colour in the autumn.

The well-known scarlet S. fulgens is another brilliantly coloured species from the Mexican mountains. It grows from two-and-a-half feet to three feet high. This Sage has wintered in the open border at Wisley, but, like the preceding, it is worth the trouble of taking cuttings during the autumn. S. involucrata var. Bethellii is a handsome plant of bold, upright habit, and makes an imposing group in the herbaceous border, with its bright rosy-crimson flowers, borne on whorled spikes; in the bud stage each whorl is surrounded by a large, coloured bract. This also is a Mexican plant and should be propagated each autumn from cuttings. S. Greggii is a greenhouse shrub of distinct habit with carmine-red flowers and in many places makes an ideal plant for training against low, sunny walls in the open. Good specimens of this Sage may be seen in some gardens in Sussex, where they must have been for many years; when the plants have made hard wood they will resist a considerable amount of frost, especially if a few Spruce branches are placed around them during hard weather.

Two of the most common Salvias used as bedding plants are S. patens and S. splendens; the beautiful blue of the former is equalled by few flowers in cultivation. It is especially good in districts mild enough to allow the tubers to remain in their flowering quarters, protected only by an annual top-dressing of old manure or leaf-mould. Grown thus and left undisturbed for three or four years the plant is seen at its best. There are many forms of S. splendens; one of the best varieties is Harbinger, which is of dwarf habit and flowers early, thus giving the plant a long season of bloom. *R. F., Wisley.*

MESEMBRYANTHEMUM.

(*Continued from p.* 92).

CONOPHYTUM.

Conophytum elegans, N. E. Br.—This name must replace that of Lithops Marlothii, N. E. Br. in *The Gardeners' Chronicle*, 1926, Vol. LXXIX, p. 102, f. 52, for having now flowered with Mr. T. Endean (who has very kindly sent his plant for me to see), it proves to be a Conophytum. When first sent to me, the flat top, its curious, window-like structure and the fissure right across it was so like that of Lithops that I fell into the error of placing it in that genus. The flower, however, is that of a Conophytum; it is 8–9 lines in diameter, pure white, with a ring of scale-like yellow staminodes at the mouth of the 4–line long tube. The stamens are seated low down in the tube, but above the stigmas. The flower opens only in bright sunshine and is not scented. Another synonym of this plant is Opathalmophyllum Marlothii, Schwantes in *Moller's Deutsch Gart. Zeit.*, 1927, p. 64. The specific name Marlothii cannot be retained for it, as that name has already been used for a Conophytum.

C. frutescens, Schwantes in *Moller's Deutsch Gart. Zeit.*, 1927, p. 123, is a synonym of C. cauliferum, N. E. Br. The differences mentioned by Schwantes to separate them are only non-specific individual features.

CLERETUM, N. E. BR.

This genus was published in *The Gardeners' Chronicle*, 1925, Vol. LXXVIII, p. 412, but has recently been redescribed under the synonymic name of Dorotheanthus by Schwantes in *Moller's Deutsch Gart. Zeit.*, 1927, p. 283. The species are: C. apetalum, N. E. Br. (Mesembryanthemum apetalum, L.); C. criniflorum, N. E Br. (M. criniflorum, L. Dorotheanthus criniflorus, Schwant)—this is the type of the genus Cleretum; C. gramineum N. E. Br. (M. gramineum, Haw., Dorotheanthus gramineus, Schwant.); C. papulosum, N. E. Br., (M. papulosum, L.); C. pinnatifidum, N. E. Br. (M. pinnatifidum, L. f.); C. puberulum, N. E. Br. (M. puberulum, Haw.). *N. E. Brown.*

(*To be continued*).

A REVISION OF VIOLAS.

(*Continued from page* 128).

V. LYALLII, Hooker, belongs to a section of ten species inhabiting east and south-east Asia, south to Tasmania and New Zealand, and having small but generally brightly-coloured flowers. The only representative of the section in cultivation, so far as I am aware, is V. arcuata, Blume, and that under the name of V. distans, Wall. V. Lyallii is a dwarf, stemless, stoloniferous plant with longly petioled, nearly reniform leaves openly cordate at the base; it has white petals, of which the lowermost is striated with violet, and a very short spur.

V. macedonica, Boiss and Heldr., is one of the geographical forms of V. alpestris. This polymorphic species comprises V. alpestris, Jord., in the narrow sense, from the western Alps; V. polychroma, Kerner, from the Austrian Tyrol and Styria; V. pseudo-lutea, Schur., from Transylvania; V. macedonica and V. aetolica, Boiss and Heldr., from the Balkans. As a rule, V. alpestris is perennial, and has blossoms of yellow or violet, or these colours mixed. V. polychroma (which is in cultivation) is blue, while V. macedonica is either all yellow or has the two upper petals blue-violet and the rest yellow. It is very abundant among rocks in the vicinity of Belgrade. A distinguishing mark of the species in its wide sense is the large, leaf-like terminal segment of the stipules. I have had sent to me V. aetolica var. heterosepala under the name of V. oetholica; it is distinguished by the unequal size of the sepals.

V. magellanica, Forst., is linked by Farrer with four other species, of which V. sericea and V. argentea are false names (unless by the latter is intended V. argentina, an annual from the Andes), and V. ovalifolia belongs to a distinct section inhabiting the mountains of southern Asia from Afghanistan to Sumatra. V. magellanica and V. Commersonii, D.C., hail from Magellan's Straits, and belong to a small section, the main representative of which is V. maculata, Cav. The last-named is native of the Falkland Islands, Terra Del Fuego and the line of the Andes between Patagonia and Chile. Others of the section run north into central Chile. The general characteristics of all are the long root, the almost stemless shoots, the fringed stipules, longish to round crenate leaves, yellow or blue flowers and short spur.

V. majellensis, Porta and Rigo, should not be spelt magellensis as it has no connection with Magellan's Straits, but comes from Mount Majella in the Abruzzi in central Italy, where it grows on calcareous soil at about 8,000 to 9,000 feet. It is a dwarf plant, akin to V. cenisia, with the straggling root of that species, but with the leaves plicate and more crowded, the blade equal in length to the petiole and gradually running down into it, the stipules undivided or with one or two small lobes (as in V. cenisia), but with the lobes inserted in the middle or upper part of the main stipule instead of at the base, with large and nearly entire auricles, the spur considerably exceeding the auricles, and violet flowers large for the size of the plant.

V. minuta, M.B., has no affinity with V. alpina (if there is a "missing link" between V. cenisia and V. alpina, it is V. odontocalycina, Boiss.). The typical V. minuta from Mount Kasbek is pubescent, but there is a variety, var. Meyeriana, which is quite glabrous, from Mount Elbrus, both localities in the Caucasus. It is strictly a Cenisia Viola, with long, straggling roots which erupt into tufts of crowded leaves that are borne on long petioles and are nearly entire, and with the lobes of the stipules varying greatly in size. The plant does not exceed four inches in height, and the flowers are large, long-spurred, yellow (sometimes with a purplish tinge towards the edges of the petals), and stand well above the leaves.

V. mirabilis, L., cannot, in Farrer's opinion, "live up to its name," which might be an apt criticism were its name V. miranda. What is "surprising" (not necessarily "admirable") in this species is that it unites many varying characters, which are found elsewhere in separate species. Thus, in its earliest stages, it is a stemless plant, putting forth stemmed shoots later, or it may be stemmed from the outset. The stipules are quite entire, the lower ones browny-red, the upper green. The stem, 20cm. to 40cm. high, bears only one leaf in its lower and middle part, but is densely leafy at the top. The earliest flowers that spring direct from the rootstock are longly, the stem flowers shortly, the uppermost very shortly, peduncled. All are petaliferous except the uppermost, which are only cleistogamous. The flowers are fragrant, rather large and densely bearded, the colour pale lilac, bright blue, reddish, or sometimes white. The leaves, reniform, openly cordate and longly petioled, are rolled together when young like a paper-screw, as in V. cucullata. It is not an alpine species, but frequents light woods at low altitudes, as near Geneva and the lower Pesio Valley in the Ligurians, in both of which localities it is common. Widespread in Europe, it does not reach the north of Scandinavia, does not come further west than eastern France, or go further south than northern Italy. Eastwards it extends to Siberia and Japan, but is not Arctic. It appears to be exclusively calicole. It is curious that Farrer slipped in giving the leaves as "finely divided," as he elsewhere pointed out that V. pinnata was the only one of our alpine Violets with divided foliage after the fashion of V. pedata.

V. missouriensis, Greene, is not confined to Missouri but extends from Illinois, further north, to Texas in the far south. It inhabits low-lying grounds which are often flooded, along creeks and in low woods.

V. montana, L., is now related to V. canina as a subspecies. These two forms appear to be mutually exclusive in certain unrelated areas, *e.g.*, in Scandinavia, Bavaria and the Maritime Alps only the subspecies montana is found. In other districts, *e.g.*, round the Lake of Geneva, they occur together and are so inextricably mixed as almost to be indeterminable. The extreme types of each would appear to be indicated as follows:—Stems of V. montana taller and more erect (in V. canina recumbent or ascending); leaves of V. montana paler, thinner, truncate at the base, with a longer but obtuse tip (in V. canina dark, thick, usually flatly cordate, the upper ones rather acuminate); stipules of V. montana ciliate, toothed, about half the petiole of the middle leaves, sometimes exceeding the petioles of the upper leaves (in V. canina often entire on the inner side, and much shorter than the petioles); petals of V. montana longer, narrower, sky-blue with whitish base, rarely almost white (in V. canina obovate, often rather deep blue with white base); the spur of V. montana at first green, then white, sometimes long (in V. canina yellowish or white, usually shorter); capsule of V. montana more pointed (in V. canina obtuse but apiculate). The subspecies ranges from Greenland and Iceland through Europe to the Caucasus, Turkestan, Siberia and Japan. It ascends to 6,500 feet in the Maritimes. In England it is represented in Huntingdon under the name of V. nemoralis, Ktz., and near Bournemouth in the variety dunensis.

V. multifida, Willd. (syn. V. dissecta Ledeb), is now given as V. pinnata sb-sp. multifida. The "Pinnatae" group, standing high in merit among Violets, comprises five species: V. pinnata, V. incisa, V. Forrestiana, V. dactyloides, and V. chaerophylloides. Their main characters are: absence of stem and stolons, short rootstock with a few rootlets springing almost from one point; stipules adnate to beyond their middle point; divided leaves, fragrant flowers, bearded lateral petals, and long spur. The sub-species multifida is generally taller than the type, and has the leaves more deeply divided, the leaf segments being either oblong, obtuse and digitately divided (var. latisecta), or narrowly linear and rather pinnately divided (var. angustisecta, the form common in China). It is native to Turkestan, Mongolia (the Altai), Siberia (rocks on the Baikal Sea), the Amur region and the shores of the Arctic Ocean, and northern China. It grows on hills, steppes, dry places and rocks, and rises to nearly 10,000 feet. There is also a var. lobata found near Irkutsk and in Manchuria in which the leaf is cleft only one-third or one-half. The sub-species is in cultivation under the name V. dissecta.

V. Munbyana, Boiss. and Reut., with the kindred V. Battandieri was described in *The Gardeners' Chronicle*, July 10, 1926. It is native to northern Algeria and Tunis, rising to upwards of 4,000 feet in the mountains. It is a downy plant up to 30cm. tall, with yellow or violet flowers, one to three on each shoot. The violet form, but not the yellow, is well-known in gardens. Like the next species, it belongs to the group Altaica. *E. Enever Todd, Lt.-Col.*

(To be continued).

BULB GARDEN.

LILIUM HUMBOLDTII VAR. MAGNIFICUM.

Although many gardeners attempt the cultivation, again and again, of plants that only occasionally reward their patient endeavours, there are others who prefer to cultivate those subjects that grow and flower with reasonable freedom and without needing special conditions and attention. Lilium Humboldtii is a "difficult" plant and has often disappointed the grower, therefore many gardeners will not consider the cultivation of a Lily under that name. To such, however, the varietal form may be commended, for, although it is not so robust and hardy as many other garden Lilies, it is by no means so difficult to accommodate as is the type.

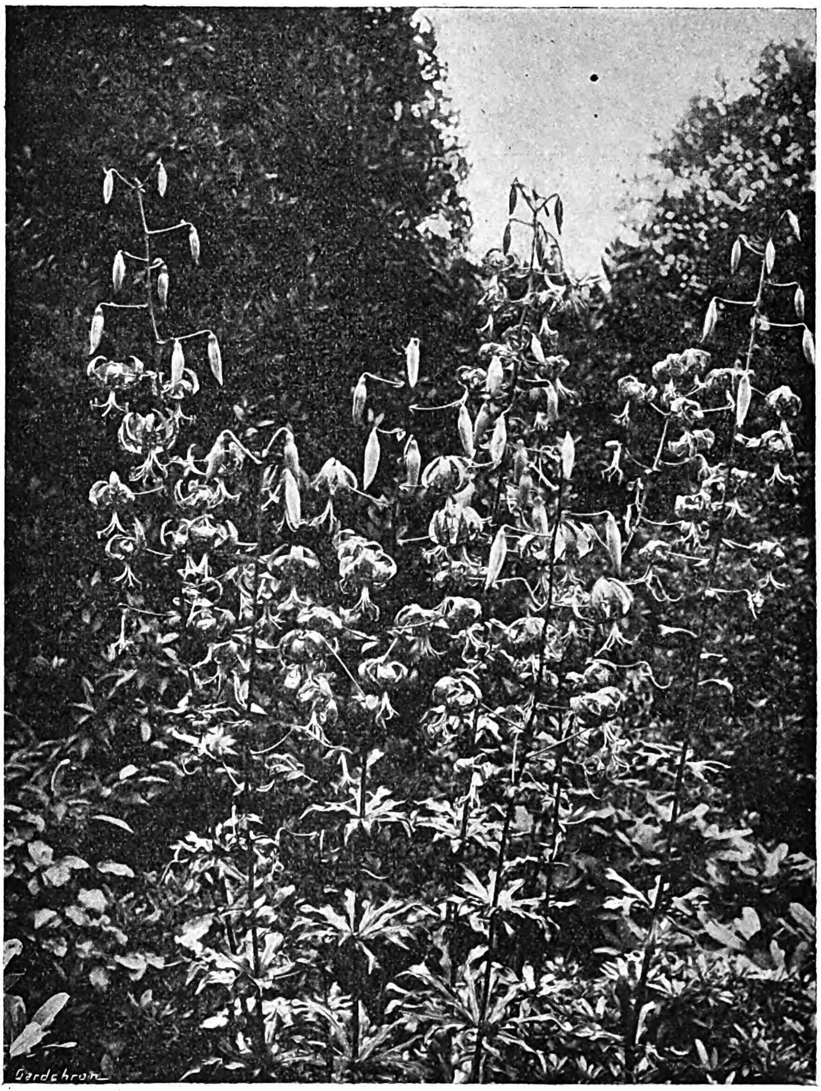

FIG. 104.—LILIUM HUMBOLDTII VAR. MAGNIFICUM.

This varietal form is Lilium Humboltdii var. magnificum (Fig. 104), which may grow so high as six feet and carry many of its blooms—coloured orange, red and gold, and thickly spotted with purple—on elegant, reddish-brown stems that bear their leaves in whorls.

Soil containing a good supply of humus, a moderately sheltered position and good drainage appear to be conditions necessary to success, while some covering, such as old leaves, leaf-mould or Bracken—laid over a few short branches of Gorse or other tree or shrub so as to prevent the Bracken from lying close and heavy on the soil—will serve as some measure of protection from severe frost. *K.*

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NOTES FROM EDINBURGH.

TREES and shrubs have more or less taken on their autumn tints and remind us of the advancing flowerless period. Throughout August, seed-collecting was impossible and plants then in flower were robbed of their ability to set good seeds. Late-flowering plants, however, are responding to the renewed bright sunshine and will, if it continues, be able to reproduce themselves. Sunshine is now also welcomed for the beneficial effects of ripening wood and preparing plants for the winter, while ornamental trees and shrubs will benefit by having their foliage and berries coloured so that they may contribute to the beauty of lake-sides, shrubberies and the garden in general.

Many late-flowering plants are adding beauty and attraction to the rock garden. They are indeed welcome for their colour and brightness which help to remove the present dull appearance expected at this time. Colchicum autumnale and C. Stevenii are among the early-flowering species, and, although the flowers in this group are unaccompanied by foliage, this does not detract from their beauty.

The Gentian family is in the forefront for giving a good display. They are invaluable for their many shades of blue, white and purple. G. Farreri and G. sino-ornata are now so common they need no description to recommend them to lovers of the genus. G. hexaphylla is worth cultivating, and may be propagated very easily by division. In winter-time it resembles a Saxifraga of the Burseriana group by forming its young shoots into cushions of remarkable compact habit, which in spring elongate to produce flowering stems, each terminating in a lovely blue flower. G. asclepiadea and the variety alba, G. Freyniana, G. lagodechiana, G. septemfida, and even our own native G. Pneumonanthe, are all charming species now in flower.

The genus Cyananthus is remarkable for its lovely blue flowers. At present many fine specimens are in full bloom and very attractive. Among the half-dozen in cultivation, C. lobatus, C. incanus and the variety leiocalyx are the best. Although somewhat late in the season, quite a dozen young plants of Meconopsis grandis have produced some remarkably large flowers, and from their robust appearance good seeds are expected later.

The Primula family is well represented by large, crowded groups of P. capitata and its many forms. When planted thickly these make a wonderful show at this season with their capitate heads of beautiful blue flowers and mealy stems. Astilbe chinensis pumila, a dwarf and compact member of the Saxifragaceae family, is to be recommended as useful. It produces stout, erect inflorescences of a pink and lilac colour. It likes a damp situation and lends itself to grouping for effect. In an open bay in partial shade a good form of Delphinium grandiflorum is flowering to perfection. The free and floriferous nature of this plant and its dwarf habit make it a special favourite. It may be utilised with success for growing in beds or borders.

Calluna vulgaris and its many varieties of brilliant colour contribute their share of effect in autumn. Among them, C. vulgaris incana is attractive on account of its dull grey feathery foliage.

The Chinese Roscoea cautleoides is a warm favourite for autumn flowering. In a pocket facing south many good spikes are to be seen with pale yellow flowers. It is propagated easily by division or seeds and never fails to produce abundance of flowers when given a suitable aspect. The Himalayan species, R. purpurea, is also a very desirable plant with purple flowers and good habit. In the same family Cautlea robusta is of interest on account of its robust habit and golden-yellow flowers, which are gracefully borne among the dark-green, strap-shaped leaves.

A batch of Calceolaria tenella, a dwarf Chilian species six inches high, looks very pretty with its small, golden-yellow flowers and orange-red spots within the lower lip. Although few-flowered, its small leaves and spreading habit make it very attractive. In addition, numerous shrubs are contributing their share of colours throughout the garden.

Hypericum Hookerianum, H. patulum and the variety Henryi are gloriously in full flower. The well-known Eucryphia pinnatifolia is covered with pretty white flowers. It remains attractive even after the petals have fallen by having persistent stamens which give a pleasing effect. Shrubs and trees which are grown for their bright berries and beautiful autumnal foliage are now commencing to colour. *A. McCutcheon.*

THE MAINTENANCE OF PERMANENT SOFT WOOD SUPPLIES IN NORTH-WESTERN EUROPE.*

THE importance of an adequate supply of soft-wood timber is greatest in those countries in which industrial development is most advanced, building and railway construction, colliery requirements, paper pulp, and packing boxes representing the main purposes for which Coniferous soft woods are used. With the exception of Germany and Italy, the industrial countries chiefly relying upon supplies of soft wood imported from northern Europe are those lying along the north-western sea board, including Belgium, Denmark, France, Holland, Great Britain and Ireland. These countries have the lowest area of forest per head of population and would feel most acutely any serious shortage. Their annual imports are, according to Mr. Fraser Story, about 600,000,000 cubic feet, their total consumption nearly 1,200,000,000 cubic feet. This does not include pulp wood or hard-wood. Great Britain takes nearly two-thirds of the total import. The normal increment from 7,500,000 acres of Conifers, of which about 66 per cent are privately owned, is about 300,000,000 cubic feet, so that there is an apparent over-felling, or reduction of the capital stock, equal to 25 per cent. of the total consumption.

Northern Europe possesses about 300,000,000 acres of Coniferous forest capable of producing, under proper management, the whole of the industrial deficit elsewhere in Europe for all reasonable time. Sweden and Finland possess one fourth of this area, and their forests are conservatively managed. Russia is at present an uncertain quantity. The present exports from northern Europe of about 800 to 900 million cubic feet could not be greatly increased at present without over-felling.

The chief measures most likely to assure the maintenance of an adequate supply of soft woods are:—

(1) Better protection against fire, and more intensive management of the existing forest area.

(2) The conversion of unprofitable hard-wood areas into Coniferous forest.

(3) The afforestation of land possessing a low agricultural value.

(4) The lowering of the *per capita* consumption of soft-wood timber by substitutes such as ferro-concrete, ply-woods and pulp from hard-wood timber, etc.

The high percentage of privately owned forest in most parts of Europe suggests a more adequate control of all forest land by the State, leading to more intensive management and the prevention of over-felling. Afforestation of poor land is a State enterprise, and cannot be effected without legislative measures. The discovery of substitutes for Coniferous wood is a matter for research and investigation.

The possibility that population and industrial activity in Europe have reached their *maxima*, and that present estimates of future timber consumption may be excessive, must not be left out of account.

TREES AND SHRUBS.

PRUNING.

ALTHOUGH the abundant rains and cool conditions experienced have assisted growth enormously, and helped to repair the very considerable damage done by the late spring frosts to the young shoots of trees and shrubs, it is desirable at this season to thin out growths where they are crowded, and shorten long shoots. This year, instead of writing that such work is desirable, it would be more to the point to write *necessary*, because of the abundant growth.

The question of pruning is in many gardens considered largely in relation to fruit trees and bushes, and Roses, whereas, if the full beauty of ornamental flowering and foliage trees and shrubs is to be obtained adequate pruning must be practised.

The general term, "pruning," includes not only the shortening of branches, but the cutting out of old stems and weak, twiggy shoots, and thinning, when the trees and bushes are overcrowded with branches and twigs. One important object in thinning is to admit light and air among the branches, and so to improve the health of the individual, the beauty of its foliage, and often the quality and probably the quantity of the blossoms. Pruning also often becomes necessary to prevent shrubs outgrowing their positions or crowding their neighbours.

Just now it is important to attend to the leaders of young trees, securing these to stakes to prevent damage by gales in winter, and to shorten side-shoots, which may develop into rival leaders, or tend to destroy the balance of the specimen.

Stress of work in other directions at the time often means neglect to cut out the old flowering growths from the Philadelphuses, spring-flowering Spiraeas, Deutzias, Kerrias and similar shrubs when the flowers are over, but an effort should be made to attend to such work without delay so that the autumn sunshine may penetrate among the branches and complete the ripening of the young wood.

September is a suitable time in which to attend to the pruning and thinning of deciduous trees. The operator should not hesitate to remove small branches right back to the main trunk of growing trees, rather than prune the stronger branches to give space for the weaker. The aim should be to obtain a limited number of strong, healthy branches, well placed on the trunk, rather than numbers of crowded branches. The removal of dead branches and twigs is another matter which should receive immediate attention. Before the leaves on the deciduous trees take on their autumn tints and fall, it is easy to distinguish living branches from those that are dead or unhealthy and decide where it is best to cut them off.

Specimens of Holly, Yew, Box, the evergreen Oaks, the Bay Laurels and similar evergreens—the growths of which it is usual to keep somewhat formal, but not closely clipped with shears—

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* Summary of a paper read by Mr. A. C. Forbes at the meeting of the British Association on September 5th.

have made exceptional growth during the last two months; therefore the work of shortening the long growths to side-shoots, or cutting out a few of the longest branches entirely to maintain well-balanced specimens needs prompt attention.

In mixed shrubbery beds and borders considerable pruning and thinning are necessary to prevent crowding. The branches of strong-growing and perhaps common, though attractive, shrubs may be growing into or over less robust and choice subjects. It frequently becomes necessary to cut away common shrubs as choice specimens increase in size. In explanation of this I may quote as examples the cutting back of Cotoneaster Simonsii that is impeding the development of a healthy bush of Hamamelis mollis, and limiting the branches of Cornus alba growing into Cornus Kousa.

Climbers on walls, fences, pergolas and arches need attention before winter arrives. Tie in the growths to be retained, and shorten or cut out shoots not required. Though the growths of Wistarias may have been shortened once or twice, they need still another "spurring," so free has growth been of late. Because of their beautiful autumn colour it is not desirable to do much pruning to the ornamental vines on pergolas and arbours, but a certain amount of tying and tipping of young shoots is desirable to prevent, so far as possible, damage from wind and heavy rains.

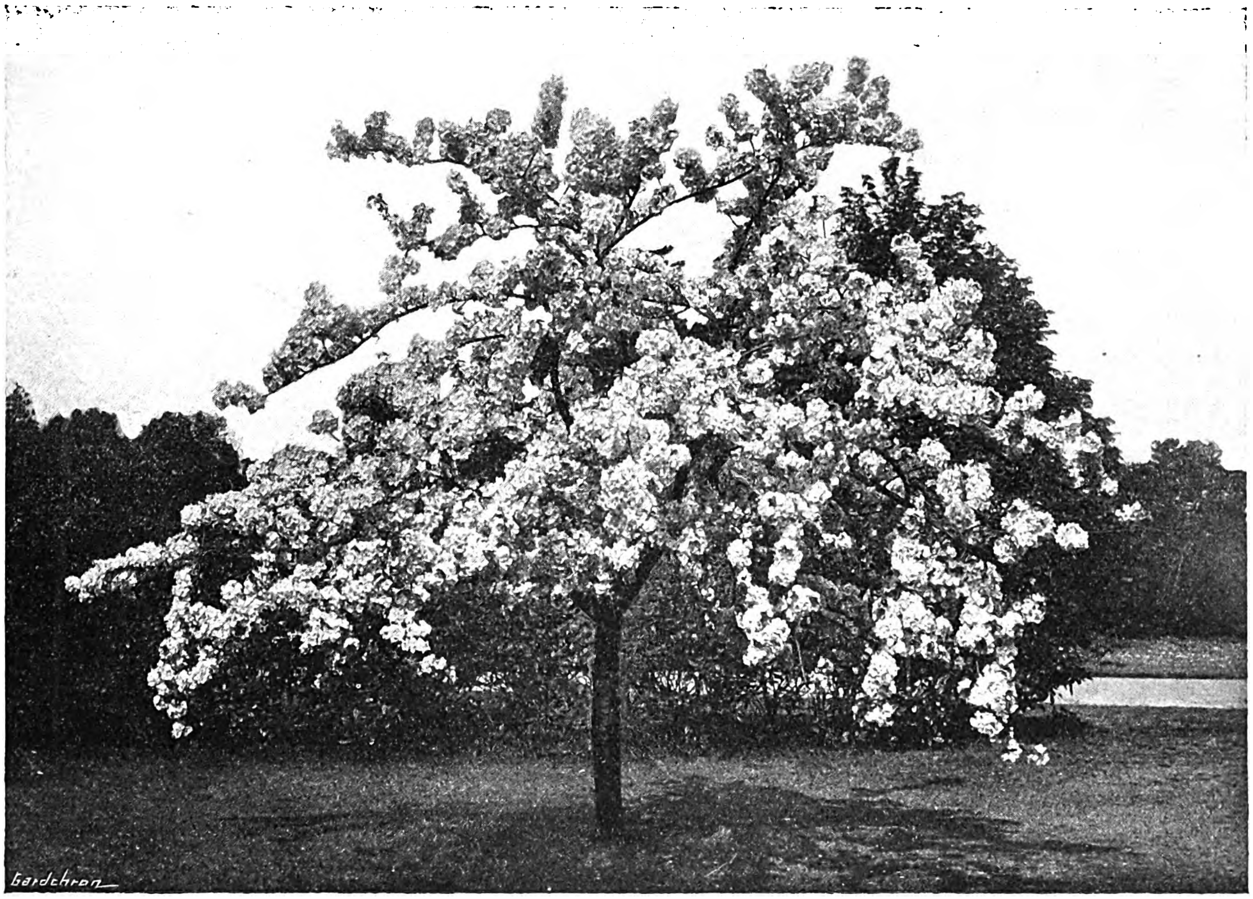

FIG. 105.—PRUNUS LANNESIANA.

THE JAPANESE CHERRIES.

Among the smaller-flowering trees, the Japanese Cherries possess a distinctive beauty, rivalled by few, and surpassed by no other family. They are valuable alike for small gardens and very extensive pleasure grounds, either planted singly, with, preferably, an evergreen background, or in groups of three to six or more trees.

Small budded or grafted trees, not more than three feet high, often flower freely, notably in the case of Waterer's Japanese Cherry, Prunus Sieboldii. In fact, the trees often flower so freely that they make very little new growth, hence they only increase slowly in size. It is thus desirable to prepare the ground thoroughly previous to planting by deep trenching and manuring, adding plenty of turfy loam, if the soil is poor, and chalk or old lime and mortar-rubble if there is a shortage of lime in the ground. Mulching the roots with decayed manure or watering them with liquid manure so soon as the flowers fade is very beneficial to the trees. One reason, no doubt, why these Cherries flower so freely is that most of the varieties have double, or semi-double, blossoms, and do not produce fruits, with the result that so soon as the flowers fall, the growth of the tree is centred on the development of flower buds for the following spring and new growth.

With one or two exceptions, the very many Japanese named varieties belong to either Prunus Lannesiana (Fig. 105) or P. serrulata. A selection of six of the best and most distinct varieties is as follows:—Hizakura, the best rosy red variety; Sieboldii, a free-flowering pink sort; Temari, pale semi-double pink; serrulata, distinct in growth, with long, horizontal branches studded with large, double white blossoms in early May; grandiflora (syn. flore luteo pleno), distinct, yellowish-green flowers; and pyramidalis, with upright, Lombardy-Poplar-like growth, and delicate pink flowers. *A. O.*

LILACS.

Lilacs are general favourites among spring flowering shrubs for both large and small gardens and "Lilac-time" is looked on as one of the most delightful periods of our beautiful English springtime. Shrubs of graceful habit and free-flowering qualities, they are very attractive when in flower, and present a neat appearance in the shrubbery during the remainder of the summer. Small bushes are also extremely useful for forcing during the winter, for which purpose they are particularly suitable. They succeed in almost all types of cultivated soil although they have a decided preference fo a good, medium loam. Soils lacking in humus should have liberal quantities of organic manure added when preparing them for planting, while those of a very heavy nature may, in, addition, receive a dressing of rubble or other coarse, gritty material.

Lilacs are surface-rooting plants and a mulch of decayed manure to conserve moisture during the growing season is highly beneficial. It is unreasonable to expect them to flower satisfactorily when planted under other trees, and only open, sunny positions should be chosen for them. The pruning of the bushes is a matter which frequently receives scant attention, and should be done immediately after flowering by removing the trusses of flower, cutting back to promising buds or growth, and removing thin and weak wood so that a reasonable number of strong, healthy growths may develop which will have every chance to set and ripen flower buds for next year's floral display.

Propagation may be effected by layering and cuttings, and these methods have advantages in that there is not the defect of suckers, but plants raised in this way take several years to reach useful size, and grafting is more often practised.

The present-day varieties of Lilacs are remarkable for the large size of flower and effectiveness of the inflorescence, and most of those popularly grown are of continental introduction. Whereas the colouring in the earlier varieties was almost restricted to white and purplish-lilac the range is now considerably widened and includes many shades of rose, red and crimson. Marie Legraye, with large, single, white flowers, and Charles X, with blue flowers and reddish buds, are two of the best sorts for forcing in pots because of their floriferous habit, and they may be counted worthy of inclusion in any collection. Amongst other single varieties of great merit are Congo, with long and wide trusses of a fine red colour; Hugo Koster, large purplish-crimson; Lavanensis, pale pink; L'Oncle Tom, dark crimson; Madame Francisque Morel, an attractive violet-pink; Reaumur, broad trusses of dark crimson; Pasteur, long-panicled claret-red, and Souvenir de Louis Späth, rich vinous crimson.

The double-flowered varieties are also very beautiful and include Abel Carrière, large blue flowers; Alphonse Lavallee, blue, shaded violet; Condorcet, long, massive trusses of lavender flowers; Emile Lemoine, pink; Madame Abel Chatenay, long, white spikes; Madame Casimir Périer, very fine creamy-white trusses; Michael Buchner, rosy-lilac, and Marc Micheli, with enormous trusses of soft azure-blue flowers. *A. P. C.*

BROWN-ROT DISEASES OF FRUIT TREES IN 1926.

The brown-rot diseases of fruit trees caused by Sclerotinia cinerea and S. fructigena were unusually prevalent during 1926. The wet spring favoured infection of the flowers by S. cinerea, and blossom wilts were common in consequence, while in late summer infection of ripening fruit by S. fructigena was responsible for considerable loss.

Blossom-wilt of Cherries (Sclerotinia cinerea) was an instance illustrating the effect of weather conditions on the incidence of disease. Early varieties were in flower during a brief fine period which favoured pollenation and early setting. A period of dull, wet weather with low temperatures then set in, which not only favoured the development of the blossom-wilt fungus, but also produced conditions unfavourable for bees, so that pollenation was retarded, and since the flowers remained open for a long time they were more liable to infection. Thus, in one orchard, visited in May, the variety Early Rivers, which had been in flower during the sunny period when bees were active, gave promise of a good crop, while other, later varieties, such as Kentish Bigarreau (Amber), Florence and Napoleon, were very badly infected with blossom-wilt.

Morello Cherries (Fig. 106) particularly suffered in this way for they were in flower for about four weeks; throughout this period they were liable to infection, and in plantations where dead infected wood had not been cut out before the flowers opened the result was disastrous.

Visits were paid in spring to a number of Morello Cherry plantations where blossom-wilt was prevalent. In one plantation of about 1,000 trees in the neighbourhood of Maidstone, every tree (with the exception of two or three very young trees with few flowers) showed blossom-wilt and recently killed twigs. An attempt had been made to cut out the dead wood of the previous year's infection, but it had not been thoroughly carried out, for most of the trees showed one or more old dead twigs bearing the fungus, and it was observed that most of the wilted trusses of flowers were in close proximity to the fungus-bearing twigs. In another plantation on the same estate the trees had received no attention whatever and no attempt to cut out the dead wood had been made; on these all the blossom trusses were killed by blossom-wilt infection (either directly, or indirectly by the death of the twigs), and the trees had the appearance of having been swept by fire.

On another farm near Maidstone a plantation of some two hundred young Morello trees (five years old) were seriously affected by blossom-wilt.

A plantation of five or six hundred Morello Cherries, about fifteen years old, in the north-west of the county, was also visited. In this case practically all the flowers were withered and many branches were being killed back. I was told that there had been a slight attack of the disease in 1925, but that owing to pressure of other work, the necessary cutting out of dead wood had been neglected, with the result that this had served as a source of infection for the 1926 crop.

That the very unfavourable weather conditions were an important factor in these epidemic outbreaks is undeniable, but a great deal of the infection could have been prevented if the precaution had been taken to remove all the twigs killed the previous year, as shown by the fact that even where the cutting out had been imperfect there was considerably less infection than in those cases where it had been omitted altogether.

As the flowering period was so prolonged the flowers which opened early became infected and these soon produced masses of spores which also served as dangerous sources of infection for the flowers which opened later.

Certain varieties of Plums were also seriously infected with blossom-wilt, and "wither-tip" (particularly in Victoria Plums) was prevalent.

An instance of wither-tip (infections, followed by withering, of the young, green shoots) was found on a Myrobalan hedge; no particular harm was caused in this case, and its chief interest lies in the fact that such diseased shoots, occurring in unexpected places, are easily overlooked and might serve to infect the more valuable fruit trees.

Wither-tip in Cherries (Fig. 107) is much less common than in Plums, but examples were found on young trees at East Malling; during the winter these produced pustules of spores on the dead shoots as in the case of Plums. On a plot of "maiden" Cherry trees (variety Napoleon) the leading shoots were killed back in this way on about half the trees. Wither-tip was also seen on large, established trees in the neighbourhood of East Malling.

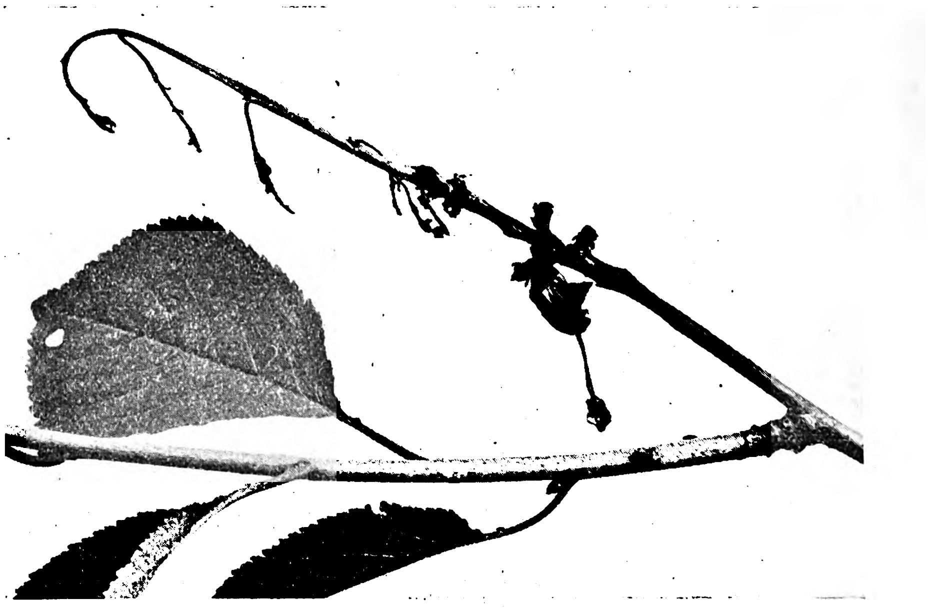

FIG. 106.—BROWN WILT OF MORELLO CHERRY.

A disease of a Japanese flowering Cherry (Prunus serrulata), killing back the tips of the branches, first observed in 1925, was again noted in 1926. Laboratory cultural methods showed that (as in 1925) the mycelium of Sclerotinia cinerea was present in the dead twigs, and the inference is that this fungus is the cause of the disease. An unusual form of disease was found on some Kentish Red Cherry trees in the Weald. Certain parts of the branches became unusually swollen; the bark below these tumourous-looking outgrowths was brown and dead. On placing particles of this diseased bark on culture plates the fungus S. cinerea grew out and the probable explanation of the abnormal condition of the branches is that infection took place through the blossoms; from the flowers the fungus extended into the bark of the twigs and killed it, while the wood continued to convey sap to the parts beyond the infected area. Infection thus caused a type of natural "ringing". and there was an accumulation of food material above the injury with hypertrophy of the tissues.

Blossom-wilt of Apple trees (Sclerotinia cinerea f. mali) was again serious in places. The Lord Derby variety is particularly susceptible to this disease, and trees of this variety on two farms at East Malling were seen, during the winter of 1926-7, with numerous cankers and dead spurs bearing the fructifications of the fungus.

Sclerotinia fructigena, the common brown-rot fungus which infects the fruit of Apple and Pear trees, was again responsible for much rotting of the fruit. Though usually associated with the "core-fruit". (Apple, Pear and Quince) it caused much rotting of Plums, and at East Malling was responsible for more rotting of the Plum crop than S. cinerea. S. fructigena was also found on the fruit of Cherry Plum (Myrobalan) and of Morello Cherries.

The prevalence of S. fructigena in late summer made careful picking and sorting a necessity if the fruit was to be marketed or stored. Cases were noted where Apples had been picked *from* the stalks instead of *with* the stalks, with the result that the brown-rot fungus immediately set in at the wound, and there was conspicuous rotting within two or three days after picking, the rot in these cases starting at the stalk end. The variety in which this type of infection was observed was James Grieve, an Apple very susceptible to brown-rot.

Although S. fructigena invariably (so far as is known at present) infects through the fruit, in certain soft-wooded varieties of Apples, it can extend from the fruit into the spurs and branches and so cause cankers. Specimens of dead spurs of James Grieve received from Essex during the winter bore barren funga pustules, particles of which, when transferred to culture plates, gave rise to typical cultures of S. fructigena. *H. Wormald, Plant Pathologist, East Malling Research Station.*

THE SELECTIVE ACTION OF TETRACHLORETHANE AS A GREENHOUSE FUMIGANT.

That tetrachlorethane may be used with success as a fumigant for White Fly (Asterochiton vaporariorum) in greenhouses was pointed out by the present writer in 1920 (*Annals of Applied Biology*, 1921), who was then investigating this pest at the Cheshunt Experimental Station. It was, however, at that time difficult to obtain the material in quantity, and it was expensive, while samples varied in colour and in odour, so that it was suspected that possibly free chlorine might sometimes be present in amounts that would be deleterious to plants. Its cost then, possibly still, made it no more than a curiosity to the commercial grower who has to deal with cubic feet by the hundred thousand. Cyaniding was cheap and certain, and, if proper precautions were taken, not seriously harmful to plants, while more up-to-date methods of applying the gas have now removed some of the mechanical difficulties which existed seven years ago. For these reasons only tentative experiments were then made with tetrachlorethane at the Cheshunt Station, and it is interesting to learn from notes and advertisements in gardening journals that it is taking its proper place—not a primary place—as a greenhouse fumigant. Owing to its non-poisonous nature and simplicity of application it is certainly a very tempting substance for use by the gardener with only a small quantity of glass.

The reason why these notes are written is that in a recent article on greenhouse fumigation by Mr. Theodore Parker (*The Gardeners' Chronicle*, June 18, 1927) it is stated that in using tetrachlorethane "it should be carefully noted that certain plants are particularly susceptible to its fumes, and it should not be used under any circumstances in houses containing Chrysanthemums or Cinerarias; there are other plants which are only partially affected." In these words, Mr. Parker justifies a misgiving which the present writer had and expressed because during one fumigation in a greenhouse of mixed plants (Dr. Bewley's experimental house) there happened to be two young Sycamore seedlings in pots and some days after the fumigation these turned sickly and shed all their foliage, this being the only instance of damage that was recorded. It was evident that if one species of plant suffered others not tested would probably do so also, for one could not imagine that Sycamores alone would be susceptible.

Why is it then that the vapour of tetrachlorethane is selective in its damaging action on plants? As one thinks of other gases which harm vegetation if used in sufficient quantity, such as hydrocyanic acid gas, sulphur dioxide, chlorine, the vapours of phenol and cresol, none springs to mind which has the same type of selective action. In any one test with such definitely poisonous substances some plants may be damaged and others not, but it is more a question of the degree of sappiness or softness that decides whether burning will occur, rather than of species, in these cases. But tetrachlorethane is selective in its action on insects also, for, as Mr. Parker points out, it does not seem to affect green fly. Does not this analogy give some hint as to why it damages some plants and not others?

All stages of the white fly are covered with wax, mealy in the case of the adult and egg, smooth in the larvae and pupal stages, except at the porous areas through which the insect breathes. Tetrachlorethane is a wax solvent, and it is fairly certain that its action on white fly is dependent on this property. Its vapour causes the wax to "run" and so upsets the delicate mechanism of breathing in the fly and its larvae. It is probably that it is not a tissue poison in the proportions used, since if it were one can hardly conceive that the green fly should escape its action. Its effect, especially on the pupae of white fly, is of interest in support of the idea that it is not a tissue poison. The pupae are enclosed in waxen cases, like raised meat pies, in which there are natural lines of rupture, as between the lid of the pie and its sides. The vapour of the tetrachlorethane fuses the wax along these lines of fracture, and days after the fumigation, when all perceptible traces of the chemical have gone from the house, the white fly adults are found endeavouring to escape from their cases, and dying half way out because the lines of fracture of the wax have been destroyed. When a tissue poison such as hydrocyanic acid gas is successfully used, however, they die in their cases, having made no attempt to emerge.

Is tetrachlorethane then a tissue poison to Chrysanthemums and Cinerarias, or is it entirely a mechanical poison, as is probably the case to the white fly? The foliage of these plants certainly feels waxy to the touch, but whether there is a demonstrable wax on it the writer is not aware, and, as these notes are written in the hinterland of Nigeria, the writer cannot test it, for there are here, alas! no glasshouses nor Chrysanthemums nor (not wholly alas!) pest-fostering Cinerarias. The question of this selective action of tetrachlorethane for plant and insect offers a pretty subject for research to one who has time and opportunity. *Ll. Lloyd.*

NOTICE OF BOOKS.

Gardens of the Dead.*

THE "cult of the dead" which finds expression in varying degree and in different forms among practically all the peoples of the world, from the most primitive savages to the most highly civilised of nations, has its happiest development in those countries where a love of gardening and of flowers is characteristic of the inhabitants, and is closely associated with their reverence for and remembrance of those who have "passed on."

This is especially the case in Germany, where every evidence of loving and anxious care to make a real "God's Acre" is to be found equally in the smallest country church-yard and in the extensive and numerous cemeteries on the outskirts of Germany's big and rapidly growing industrial towns.

FIG. 107.—WITHER TIP OF SWEET CHERRY.

In fact, cemetery gardening is a matter of so much interest among German municipal horticulturists that it is not surprising to find that a book has been published upon the subject. It is entitled *Die Praxis der Friedhofsgärtnerei,** and is from the pen of Josef Hempelmann, a landscape gardener well qualified by practice and by long study to write on the special problems which confront the cemetery garden—problems which have much in common with those of ordinary public park gardening, but are not by any means identical. The great difficulty to be met is that of reconciling general good taste and the necessity for creating a fine *ensemble* with a due regard for the susceptibilities of the bereaved, and with the wide latitude they naturally expect in the way of flower-planting and monumental masonry. In this country the artificial wreath is seldom seen, and is prohibited in many of the larger English cemeteries, to the great improvement of their appearance. In France and Belgium such action would be impossible, as wreaths made of beads and other durable materials are almost universally employed, especially in the provinces. This difficulty, however, does not appear to have arisen in Germany; real flowers seem to be employed as a matter of course, and in the way of headstones and monuments public taste would appear to be sentimental and slightly materialistic rather than definitely bad.

The author reminds us that flower decoration and flower cultivation in connection with the graves of the dead is no very ancient custom. It was unknown in the Middle Ages, when the favourite place for burial was inside the church, preferably immediately beneath or in front of the altar. It was only when such spots, being limited in number, were filled, that, for lack of room inside the church, graves were made outside, huddled as close to the sacred walls as possible. Gradually the extent of the graveyard widened, until in comparatively recent times the phenomenon arose of a cemetery apart from the church, and even some way from the centre of population—a necessity born of the tendency of an industrial age to concentrate in towns instead of having the population scattered over the country in small communities.

Apart from the decorative value of flowers and their aesthetic appeal, their easily grasped symbolism led to their rapidly becoming popular in association with the idea of death and the desire for immortality. While this association is likely to persist indefinitely public taste is all the time improving, and encouraging the municipal authorities to make of the cemeteries under their control more and more of pleasant, peaceful open spaces or gardens, and less of mere graveyards. That this tendency has had full scope in Germany during the past twenty years at least is fully demonstrated by the illustrations in the volume before us, some of which it is difficult to believe were not taken in some private park or garden of more than ordinary natural beauty. Everything, even of the most utilitarian nature, is turned to account to add to the beauty and restfulness of the scene. One recalls with displeasure the ugly standpipes which disfigure so many cemeteries, when one considers the simple, perfectly artistic little fountain and basin in Fig. 66, or the charming "Spring by the Wayside" shown in Fig. 67. Even a drainage ditch can be made beautiful at no great expense by the judicious planting of Rushes and the provision of a pretty, single-span, brick-built bridge (Fig. 20), while nothing could be happier or more harmonious than the little gabled chapel with a separate open timber bell tower (Fig. 64), designed for a country cemetery near Düsseldorf. In a country like Germany where forestry is taken so seriously and woodland scenery so greatly admired, it is not surprising to find that some of the finest cemeteries are of a woodland character, though a forest site presents many difficulties. A general desire is commonly expressed by those purchasing positions for graves to have them in the cool, restful shade of the trees. Later, however, when the grave is established, it is natural to wish to plant it with flowers—even Roses, for example, for which bright light and the free play of the air are so necessary. Then, in the autumn, there is always the difficulty of the fast-falling leaves, of which it is impossible for the personnel of the cemetery to keep the graves at all times free. Certain kinds of woodland are out of the question for cemetery use—for instance, Beech, on account of its early and copious leafing, which shuts out all light from the ground below. Oak is better, as it assumes its foliage later, and the leaves by their uneven shape permit of more light filtering through. Of Conifers, Pine is the best, Fir being again too dark. Another disadvantage of the forest site is that the ground is nearly always damp, necessitating extra careful drainage; furthermore, the trees absorb so much nourishment that if ample undergrowth is to be maintained, manuring has to be resorted to.

All these and many more difficulties, however, have been triumphantly overcome in the case of the Sennefriedhof, Bielefeld, and many others, which, although laid out in some cases only a decade or so ago, have already assumed a settled and permanent appearance, which reflects great credit both on architect and on staff. To those among our own municipal gardeners who read German, this book will be a delight, dealing as it does so fully with every aspect of cemetery lay-out and upkeep, even to small details, such as the provision of rubbish receptacles and the best ways to exclude prowling cats. The book is beautifully printed on art paper, and every one of the 191 illustrations is a work of art in itself.

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* *Die Praxis der Friedhofsgartnerei.* Von Josef Hempelmann, Berlin; Paul Parey, Hedemannstrasse 10 and 11. Price 19 marks.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137)

(*Continued from p.* 214).

MIDLAND COUNTIES.

Buckinghamshire.—The fruit crops are, on the whole, disappointing. With the exception of Apples, all the crops are much below the average, mainly due to the exceptionally dry spring and severe frosts during the flowering period. Pears are very scarce, and we have no Plums. Strawberries, Raspberries and bush fruits improved with the summer rains, but were much below the normal yield. Peaches, Nectarines and sweet Cherries gave fair yields in places, but Morello Cherries dropped badly during the stoning period. *F. Reid, Dropmore Gardens, Burnham.*

Cheshire.—As last year, there was a splendid show of blossom in this part of north Cheshire along the Mersey valley, but the usual frosts came about the beginning of May and ruined the bulk of the Pear, Plum and Damson blossoms. About May 8 Apples were setting well, but weeks of cold wind and a dry spell till May 31 caused many of the fruits to fall. However, varieties such as Charles Ross, James Grieve (a favourite about here), Rival and Keswick Codlin, are now looking well after the copious rains, and given some hot sun there should be crops well above the average. Black Currants, Raspberries and Loganberries all fruited nicely and Strawberries bloomed well. We are favoured with good, rich soil, and plenty of small fruits are grown in this district for the neighbouring Manchester market. *C. E. Ardern, Eagle Brow, Lymm.*

——Severe frost in April when Pears were in full bloom resulted in the crop being almost a complete failure, except on walls in very sheltered places. Apples are rather better than of late, especially the varieties Lord Grosvenor, Emmett's Early, Jubilee, Newton Wonder, Bramley's Seedling, Kentish Fillbasket, Victoria, James Grieve, Worcester Pearmain, Allington Pippin, and Charles Ross. Strawberries were almost a complete failure, being the poorest crop on record, in spite of the plants having received more attention in cultivation than usual, with a view to overcoming the deterioration that has been so marked of late years. Black Currants, in spite of having received less attention were better, both as regards quantity and quality, than for some few years. No digging whatever was done amongst the bushes this year. Bushes sprayed with tar wash were remarkably good. Red Currants, too, sprayed with tar wash, suffered less from the birds taking the buds, and have cropped remarkably well. *S. A. Summerfield, Alderley Park Gardens, Chelford.*

——On our sandy loam, the excessive wet weather of the spring and summer has not had such a retarding effect as on some of the stiffer, holding kinds, on some of which fully half of the crops have fallen prematurely. Our crop of Apples of most varieties is excellent, especially Lord Grosvenor, Stirling Castle, Maltster and Striped Beefing. Pears, owing to earlier blooming, were caught by the frosts, and Plums were also ruined. The crops of small fruit—Gooseberries, and Currants—were up to the average. Strawberries, Raspberries and Loganberries were better than for some years past. *Alfred N. Jones, Marbury Hall Gardens, Northwich.*

——The Apple and Pear crops here are above the average, but some of the varieties caught the 8° of frost which we experienced on April 29. Much of the foliage was damaged and many of the trees have not yet recovered from it. Strawberries were a splendid crop, but the daily heavy rainfall did much damage to the fruits before they became ripe. Gooseberries and Black and Red Currants were good crops, and the foliage is free from disease. Raspberries were plentiful. Morello Cherries were good, but Sweet Cherries and Plums were failures. Our best Apples this year are James Grieve, Worcester Pearmain, Irish Peach, Ecklinville, Lane's Prince Albert, Warner's King, The Queen and Annie Elizabeth. Our best Pears are Williams's Bon Chrêtien, Emile D'Heyst, Pitmaston Duchess, Beurré Diel, Marie Louise D'Uccle, Beurré de Capiaumont, Marie Louise, Conference and Catillac. The cold, wet weather that now prevails is keeping fruit and all kinds of vegetation back. The growths on fruit trees and bushes are greatly retarded. If the weather does not become warmer, I am afraid many of the fruits will drop. Our soil is a heavy red loam on a subsoil of sand. *James B. Allan, Tirley Garth Gardens, Tarporley.*

Derbyshire.—Our soil is stiff loam on clay and this garden is situated 480 feet above sea level. After light crops last year, trees of Blenheim Pippin, Worcester Pearmain and Lord Suffield Apples are cropping heavily. Pears withstood the severe frosts in a remarkable manner, but Plums and Damsons, which had passed the flowering stage, succumbed to the frost, with the exception of Pershore, which in most positions is carrying a good crop. Strawberries were badly damaged although the flowers were not open. Black Currants and Raspberries greatly improved after heavy rains. *William Parks, Whittington Hall Gardens, Chesterfield.*

(*To be continued*).

FRUIT REGISTER.

RASPBERRY EXETER YELLOW.

There are several yellow Raspberries in cultivation, but they are not very popular with growers, although a dish makes a pleasing addition to the dessert table. Amber Queen is one of the most popular varieties, and there is a yellow form of Superlative known as Guinea, whilst the newer Yellow Hornet is quite one of the best of the yellow sorts, and received the R.H.S. Award of Merit on August 12, 1919, after trial at Wisley.

At the meeting of the Royal Horticultural Society on July 19 last, Messrs. R. Veitch and Son showed a very large Raspberry of this colour named Exeter Yellow (see Fig. 108). Mr. P. C. M. Veitch stated that it originated as a chance seedling in his firm's nursery. He brought to the meeting several sprays, including the one illustrated, which showed that it is a very free-fruiting variety, and as the berries are large and handsome in appearance as well as of good flavour, the Fruit and Vegetable Committee recommended the variety to be included in the trial of Raspberries at Wisley.

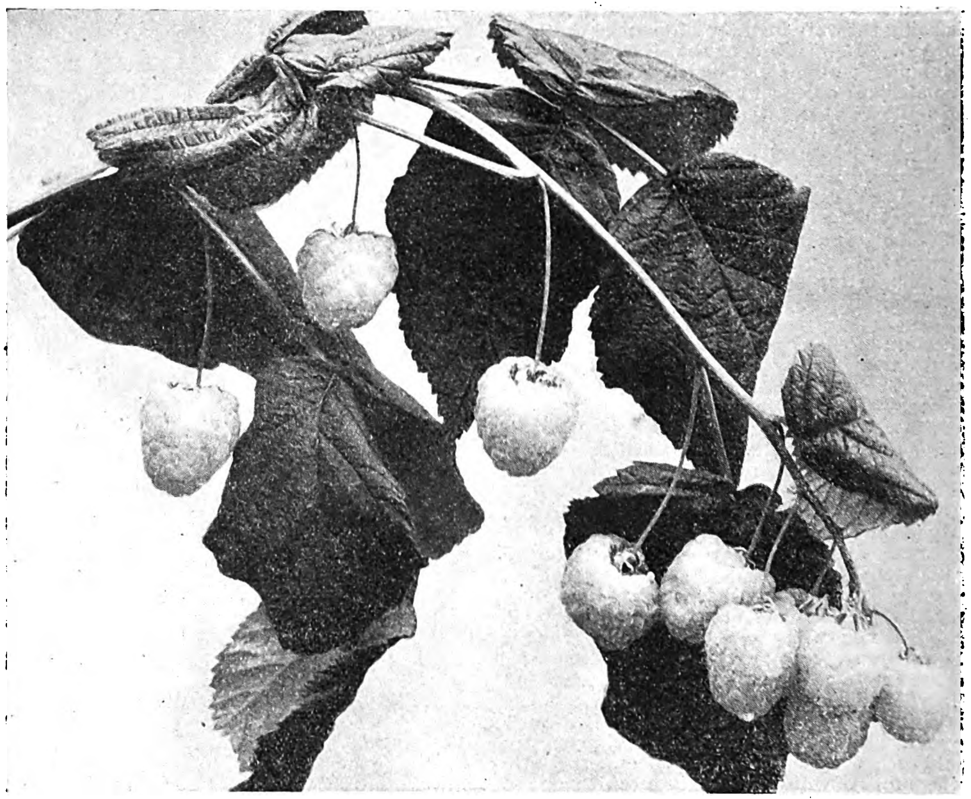

FIG. 108.—RASPBERRY EXETER YELLOW.

APRICOT ST. AMBROISE.

Admittedly not so good as Moorpark, St. Ambroise is, nevertheless, a very fine Apricot, rather earlier than the better-known variety, for it ripens in mid-August. The tree is a prolific cropper. The fruit is large, compressed, of deep yellow colour, with a red flush on the side next to the sun. The flesh is richly flavoured and sugary.

The tree grows rapidly and vigorously when planted against a south wall, and is, possibly, the most prolific and the most vigorous of all Apricots.

PLUM DENNISTON'S SUPERB.

This is a dessert fruit of the highest quality and a Plum that merits recognition wherever choice fruits are appreciated; the fruits are of medium size, roundish-oval, a little flattened and with a very distinct suture extending right round the fruit. The skin is pale yellowish-green with a very few thin, scattered, purplish blotches and dots covered with a thick bloom; the stalk is inserted in a small cavity and is about three-quarters-of-an-inch long. The flesh is yellow, rich and juicy and adheres to the stone.

The tree grows admirably as a bush or as a fan-trained specimen against a west or south wall; it is a reliable cropper and the fruits ripen about mid-August.

This Plum is of American origin, and was raised by a Mr. Denniston, of Albany, New York. *Ralph E. Arnold.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Night-Scented Stock.—There seems to be a perennial as well as an annual Night-scented Stock. I have looked up many references to these. The perennial one is Matthiola tristis of some, Hesperis tristis of others, and is a plant difficult to grow and propagate. In *Annuals*, in "Present-day Gardening Series," M. tristis is classed as an annual and advised to be treated like Mignonette, which must be wrong. Mr. Bowles, in *My Garden in Summer*, gives most enlightenment. He states that Matthiola tristis, "the old Night-scented Stock of one's great-grandmother, is another half-hardy indispensable, for I think its scent the sweetest of all those produced by the dingily coloured plants that wake up towards evening and advertise for moths to undertake their pollen dispersal in return for a supply of nectar, and so distil the most wonderfully alluring scent to attract them. This little perennial, bushy Stock is not much to look at, with its narrow, grey leaves, and spikes of small lilac and brown flowers, but it beats all the rest of the family in its scent, which has more of Cassia-buds and Russia leather about it than the Cloves or Friar's Balsam I detect even in Matthiola bicornis, good as *its* evening offering of incense can be on a still summer night." Matthiola bicornis I have known for many years as the Annual Night-scented Stock, and for many years I have grown it in the gravel under the windows of my home. At the end of April I take an ordinary hoe and scratch, a few inches from the wall of the house, a triangular drill an inch or so deep, and in it sow, very thinly, seeds of this Stock. It always grows well. During the day it is not pretty, but it wakes up in the evening, and for many hours its small, Cruciferous, lilac and white flowers remain open and flood the surrounding atmosphere with sweet perfume. If doors and windows are open the scent penetrates the house and continues through the darkness. In the gardens of homes for the blind I am sure this would be a welcome plant, and to any such institutions I would gladly send some seeds if the management wrote to me. *Wm. Cuthbertson, Duddingston, Midlothian.*

Lilium Farreri.—An old Latin proverb states that "it is the nature of every man to err, but of none but a fool to persevere in error." Bearing in mind the plain truth of these words, I hasten to express my grateful thanks to Sir Herbert Maxwell for his correction (*Gard. Chron.*, p. 188) of my notes on Lilium Farreri, remarks in which I misinterpreted Mr. E. H. Wilson's *Lilies of Eastern Asia* re the Martagon group.—*L. B. C., Cheshire.*

Slugs.—In order to get the traps (the "Any-pot trap" I described some years ago) more regularly rebaited, I instituted a measuring glass into which the "bag" is ladled when the traps are attended to. The records show that from Nov. 25, 1926 to April 1, 1927, we took 14 pints over certain parts of the garden. In August measuring was again instituted, and already by September 3, we have 4½ pints, but regions which were cleared earlier now give poor bags, which is some satisfaction. If I were writing to a well-known contemporary, I suppose that I ought to append, "Is this a record?" *H. E. Durham.*

SOCIETIES.

DEESIDE (ABERDEENSHIRE) FIELD CLUB.

Favoured with radiant weather, nearly 260 members of this club visited, with the kind permission of Mr. and Mrs. Baird, the famous woods of Durris, near Aberdeen, on Saturday, the 3rd inst. The large party was, owing to the indisposition of Mr. Baird, received by Mrs. Baird, who extended a hearty welcome to the visitors. The Marquis of Aberdeen and Temair, President of the Club, expressed the great indebtedness of the members for the warm welcome they had received to such lovely surroundings. For generations past these woods have been carefully and systematically supervised, with the result that to-day there are no finer in the Three Kingdoms. Continental experts who have paid visits here have been amazed at the magnificence of Durris woods. The present proprietor, Mr. Baird, himself no mean authority on forestry matters, has worthily maintained and greatly added to the high traditions bequeathed to him.

The outstanding feature of the day was the address given by Mr. John Michie, M.V.O., President of the Aberdeen Branch of the Royal Scottish Arboricultural Society, and for many years head forester, and, latterly, Commissioner, on the Royal estates of Balmoral, and now retired. That finest amalgam of all, practice and theory, was conspicuous all through Mr. Michie's remarks. He considered the woodlands of Deeside and abutting glens compared favourably with any others in Scotland, not excepting Speyside and the Black Wood of Rannock. These were natural woods constituting only remnants of the great Caledonian Forest of ancient times. Scots Pine (wrongly termed Scots Fir) was the great tree of these forests, and many good specimens might yet be seen, sown by Nature's hand, in Mar Forest, Ballochbuie, Glentanar, in Upper Deeside. No doubt in the ancient natural forest of Dee, in addition to the prevailing Pine, there had been parts occupied by Birch, Oak, Aspen, Willow, in soft ground, and Alder on the banks of streams. But, although the glory of the ancient forest had departed, they had evidence of its grandeur in the peat bogs. For generations past, heartwood logs of the Scots Pine, large and small, had been dug up in the getting of peat fuel. One, two and even three tiers had been found in different strata, with traces of Birch and the other trees, chiefly in the form of leaf impression and bark, the wood, as a rule, having decayed before being buried in the bog growth, but so indestructible was the heartwood of the natural Scots Pine that it remained sound till the sapwood had perished and vegetable growth, forming peat, had sealed it up against destruction.

Up till comparatively recent times, the only kind of wood treatment they knew of in this country was that of vandalism, except, perhaps, in the case of homesteads, where it was considered necessary to plant a few Ash trees for spear shafts, presumably to keep the Sassenach at bay, or for use in the feuds between clans. Later on, the Ash was found to be useful in the construction of implements of peace.

Then the time came when the good old landed proprietor began to see things in a proper perspective. Deeside was not by any means behind the rest of Scotland in the planting of trees. Beginning as near the source of the river Dee as tree growth would succeed to reach timber size at the present day, Mr. Michie proceeded to discuss the sylvicultural position as it now stood. One often heard, he said, that the timber line was so-and-so—meaning the height above sea-level that trees would grow to timber size. He emphasised the fact that this timber line was really as high as, if not higher, on the upper reaches of the Dee than in any other part of Scotland, the reason being that neighbouring mountains were generally more lofty.

After dwelling on the fine quota the Deeside lairds had contributed to the timber shortage during the war years, and declaring the Deeside valley still compared favourably with other sylvan parts of the country, Mr. Michie referred to the steps now being taken to rehabilitate the areas cut over. He reminded his hearers of the great expense this work entailed, including fences, and combating the attacks of injurious insect pests that followed the complete cutting of all woods. Fortunately, all along the Dee valley there were many plantations too young to be sacrificed for pit props, and this accounted largely for the rather better woody covering of Deeside to-day compared with many of the glens and straths in Scotland, notably the Tay Valley, where whole hillsides had been denuded.

Coming to deal with Durris woods, and what his hearers had seen that day, Mr. Michie said that the cultivation of newer exotic Conifers, as well as other foreign trees, had not been neglected on Deeside, and nowhere were these to be found in greater variety and better managed than on the estate of Durris. The great majority of these might be said to be more ornamental than fitted to contribute to the timber supply of Britain, but there were at least two species which had become established as valuable forest trees in this country, and on Deeside in particular, but more particularly still on the estate of Durris. He referred to the Douglas Fir and Sitka Spruce, and had no hesitation in saying that they, at least, were destined to rank high in our future timber production. In no part of the country could these trees be seen better than at Durris. On Durris, the Douglas Fir readily produced cones and mature seeds from which, for many years back, plants had been germinated and lined out in the excellent home nursery. Durris-reared plants of Douglas Fir had contributed largely to the many thriving plantations on Deeside and elsewhere. Those concerned in forestry were much indebted to Mr. Baird for the deep and practical interest always taken in sylviculture by him; and, while doing much in the experimental line to benefit the industry, he had even kept in view the cultivation of timber trees proved by experience, such as the Larch, never forgetting that:

The pine is King of Scottish woods,
But the Queen, ah! who is she?
The fairest form the forest kens,
The bonnie birken tree.

Warm thanks were accorded Mr. Michie for his admirable and delightful address. Mr. Ernest Lees, factor; Mr. Charles Stewart, forester; Mr. Andrew Reid, head gardener; and Mr. Alexander Finnie, Clerk of Works, all of Durris estate, acted as guides with great acceptance, and drew attention to the noted trees and plants with which Durris is so richly endowed. Tea was served under the presidency of Mrs. Baird, and, Lord and Lady Aberdeen having to leave earlier in the afternoon, Mr. James S. Davidson, Cairnlee, intimated apologies for absence, and referred to the enormous services Lord and Lady Aberdeen had rendered to the Club. That day was one of the Club's red-letter days, and they would never forget their visit to Durris and the kindly welcome awaiting them there.

NATIONAL ROSE.

September 9 and 10.—The show of the National Rose Society, which was held at the R.H.S. Hall, Vincent Square, Westminster, on these dates was the most successful of the autumn shows arranged by that Society. The Hall was well filled with Roses of far better quality than the difficulties of the season had led rosarians to expect. In most of the classes the competition was quite good and the two trade classes for representative groups of Roses brought many collections of great merit. New seedling Roses also were very numerous, but it must be admitted that the quality generally of the novelties was poor. One Gold Medal and five Certificates of Merit were awarded. The Clay Cup, which was offered for the best new scented seedling Rose—other than climbing or rambling—of the year, and has been open to competition at all the Society's shows, was awarded to Flamingo, shown by Messrs. Alex. Dickson and Sons, which received a Gold Medal. The Cory Cup was not awarded.

Gold Medal.

Desmond Johnston.—This Pernetiana variety had previously received a Certificate of Merit, and we imagine the higher honour was conferred on account of its exceptional colour, for it in no way approaches the ideal in form. Often the fully developed blooms are semi-double and cup-shaped, but their vivid, scarlet-carmine colour on a gold base is very fascinating. The rich colouring does not fade at maturity, but seems to become intensified with age. The outer surfaces of the broad petals are heavily flushed with yellow. Shown by Messrs. S. McGredy and Son.

Certificates of Merit.

Felicia.—A very free-flowering hybrid Musk Rose of bushy habit which bears large clusters of semi-double blush flowers. Shown by Mr. J. H. Pemberton.

Lady Leslie.—A beautiful H.T. variety in its earlier stages but, when mature, the shining, rosy-scarlet colour fades to magenta on the outer petals. The flowers are pleasantly scented. Shown by Messrs. S. McGredy and Son.

Marion Horton.—A small, free-flowering, fully double H.T. variety of considerable garden value. The plant is of dwarf habit and the flowers are a bright yellow. Shown by Messrs. Bees, Ltd.

Perfume.—A very sweetly-scented, semi-double H.T. Rose of rich velvety crimson colour. The flowers, which are from four to five inches across, have substantial petals and a neat cluster of golden-yellow stamens. Shown by Mr. John Marriott.

Polly.—(See Fig. 102).—This is a long-stemmed H.T. variety of Madame Butterfly size and type, but of variable colouring. The colour generally is a pale salmon, paler at the margins, and with a deep yellow base. Shown by Messrs. G. Beckwith and Sons.

Nurserymen's Classes.

The groups of Roses arranged in the competitive classes for nurserymen constituted by far the most important displays in the exhibition. The were arranged against the wall; the largest class was for a collection arranged on a space fifteen feet by four feet, and the height was restricted to eight feet at the back. No fewer than twelve entered in this class, in which Messrs. S. McGredy and Son were placed first; Messrs. Chaplin Bros., second; Mr. J. H. Pemberton, third; and Mr. C. Gregory, Chilwell, fourth. A very similar method of staging was adopted by all the exhibitors—blooms arranged on columns and in tall epernes interspersed with baskets and vases of Roses. Two conspicuous varieties in Messrs. McGredy's group were Betty Uprichard and Margaret McGredy, with a fine display of Mrs. A. R. Barraclough in the centre. Other choice sorts were Independence Day, Admiration, Shot Silk, Mrs. H. Stevens and Mabel Morse.

Messrs. Chaplin Bros. had some splendid pillars of Roses of such varieties as Los Angeles, Lady Inchiquin, Brilliancy, Coral Cluster and Ophelia. Mr. Pemberton's exhibit was very bright, and in it we noticed excellent specimens of Vanity, Golden Emblem, Penelope and Mermaid.

For a smaller group occupying a space of eight feet by four feet, Messrs. R. Harkness and Co. were awarded the first prize for a representative collection of varieties. In the middle was a splendid stand of K. of K., and other good sorts shown by this firm were Madame Butterfly, Los Angeles, Lady Inchiquin, Doris Traylor and Independence Day, the latter of fine colouring; Messrs. W. Easlea and Sons were a good second, their exhibit containing a pretty centre basket filled with blooms of Emma Wright, White Shot Silk, Golden Emblem, Lady Dixon, Hartland, Butterfly and Clarice Goodacre were also excellently well shown by this firm; third, Messrs. J. Jefferies and Sons, Cirencester.

Only two competed in the class for twenty-four varieties, distinct, shown in vases or other receptacles, the exhibit to be arranged, so far as possible, to display the foliage and habit of growth of each variety. The better of the two exhibits was shown by Messrs. A. Warner and Son, Boxted, Colchester; Mr. John Mattock being awarded the second prize. Messrs. Warner's blooms were arranged in vases hidden behind black velvet, and included fine flowers of Etoile d'Holland, Hortulanus Budde, Shot Silk, Mable Morse, Rev. Page Roberts, Else Poulsen and other popular sorts.

The best four baskets of Roses in four distinct varieties were shown by Messrs. D. Prior and Son, Ltd. Their varieties were Lady Inchiquin, Souvenir de Georges Pernet, Mrs. H. Bowles and Golden Emblem; second, Mr. H. Drew, with Souvenir de Georges Pernet, Betty Uprichard, Madame Butterfly and Mrs. H. Morse; third, Messrs. T. Smith and Sons.

A similar class was provided for three baskets of Polyantha Roses in three distinct varieties, in which Messrs. D. Prior and Son excelled with Kirsten Poulsen, Else Poulsen and Greta Poulsen; second, Mr. E. B. le Grice, North Walsham, with Else Poulsen, Coral Cluster and Orange King; third, Messrs. W. Cutbush and Son.

Blooms in Boxes.

There were two classes in the nurserymens, section for specimen blooms shown in boxes, the one for twenty-four blooms, distinct, the other for eighteen blooms, distinct. In the larger class, Messrs. T. Smith and Sons, Stranraer, excelled, with very choice blooms, notable varieties being Dame Edith Helen, which was adjudged the best bloom in the show; Earl Haig, Janet, Capt. Kilbee Stuart, Mabel Morse and H. P. Pinkerton.

In the smaller class, Mr. J. Mattock and Mr. D. Long were placed equal firsts, and Mr. Henry Drew, second.

The best two baskets of cut Roses were shown by Messrs. T. Smith and Sons, who had fine blooms of Earl Haig and Augustus Hartmann.

Artistic Classes.

As usual at these shows, the various exhibits of tables decorated with Roses, bowls of Roses, and vases of cut Roses occupied considerable space and added greatly to the attractions of the exhibition. In the nurserymen's section the finest decorated table was shown by Miss Muriel Archer, who made a very pretty display with the variety Dainty Bess.

The Ladies' artistic classes sustained their great popularity, and there were many well arranged tables and vases of Roses. Mrs. Courtney Page, with an artistic arrangement of Roselandia and foliage, was first in the dinner table class, and Mrs. Oakley Fisher, using the same variety, was second. Mrs. A D. Ruff, withfresh blooms of Madame Butterfly, was first in the class for a vase of Roses, while Mrs. Courtney Page was second. The best bowl of mixed Roses was arranged by Mrs. Courtney Page, and Mrs. Oakley Fisher was second.

Amateurs' Classes.

The Decorative Roses in the amateurs' section were highly creditable. The best one basket of cut Roses, one or more varieties, was shown by Mr. H. Mitchell, Bradford, while Mr. George Marriott, Carlton, Notts., was second with K. of K. Showing a good basket of mixed varieties. Mr. E. T. Thistlethwaite, Barnet, was first in the class for growers residing within a radius of ten miles of Charing Cross, and Mr. A. N. Rogers, Putney, was a good second.

Competition was very good in the class for members who grow their Roses unaided, and here Rev. F. R. Burnside, Great Stourbridge, was first with a beautiful basket of Mrs. Henry Bowles and Mr. W. E. Moore, Ickenham, was second. In the class for growers of fewer than two-hundred-and-fifty plants of garden and decorative varieties and the same number of exhibition Roses, Mr. J. W. Roff, Thorpe Bay, Essex, was first with a basket of especially good mixed varieties, and Mr. E. E. Tattershall, Orpington, was second.

The Roses shown in vases were also of good quality. Mr. S. W. Burgess, Tonbridge, who had particularly fine blooms of Ophelia and Angéle Pernet, was first in the class for six distinct varieties, and Mr. George Marriott was second. Mr. H. Robins, Margaretting, won chief honours in the chief class for members who grow their Roses unaided, and he had particularly meritorious blooms of Betty Uprichard, Independence Day and Los Angeles amongst his six varieties. In the class for smaller growers, Mr. E. E. Tattershall won the first prize with six vases of good Roses.

The Exhibition Roses showed the same creditable standard of quality and, in most of the classes the competition was good. Mr. J. H. Hart, Potters Bar, who included Margaret McGredy, White Maman Cochet and Augustus Hartmann, was first with twelve distinct varieties, and Dr. W. P. Pankridge, Petersfield, was equally successful with six distinct varieties, of which his best were Candeur Lyonnaise, J. G. Glassford and Mrs. Henry Bowles. Mr. G. Speight, Market Harborough, was first with six varieties in the class for members who grow their Roses unaided and, in the similar class for smaller growers, Mr. E. H. Pleasance, Cambridge, was first with an uneven collection, but had very good specimens of Candeur Lyonnaise and Earl Haig. Mr. A. N. Rogers, Putney, and Mr. D. Ribbons, Dulwich, won the first prizes in the two metropolitan classes.

ROYAL HORTICULTURAL.

September 13.—The meeting on Tuesday last included special competitive classes for vegetables, and these dominated the exhibition, there being very few Orchids, and only one or two floral groups. The quality of the vegetables was exceedingly good, and in most classes competition was very keen. In addition to the competitive vegetables there were two fine trade groups, the one a collection of vegetables, shown by Messrs. Sutton and Sons; the other a large exhibit of Potatos staged by Messrs. Dobbie and Co.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart., Mr. Gurney Wilson, Mr. H. G. Alexander and Mr. J. E. Shill.

Owing to the sale of the late Mr. H. T. Pitt's collection, there was a poor show of Orchids, and there was not a quorum of the Committee present.

Award of Merit.

Cattleya Horos (C. Heliodor × C. Sunbeam).—The Committee recommended the Council to grant the award. This beautiful Cattleya has a medium-sized flower of rich golden-orange colour; the labellum is prettily veined and bordered with cerise. Shown by Baron Bruno Schröder, Englefield Green, Surrey (gr. Mr. J. E. Shill).

Group.

The only group was staged by Messrs. Sanders, who had distinct varieties of Cattleya Hardyana, the singular Angraecum Eichlerianum, several well-flowered examples of Odontoglossum grande, Catasetum viridiflorum, Paphinia cristata and Cattleya Bridal Veil, an attractive, pure white flower.

Messrs. J. and A. McBean, Cooksbridge, Sussex, showed Odontioda Cooksoniae var. Vivid, with a spike of twenty-two scarlet-red flowers, Laelio-Cattleya Profusion, and Cattleya Aeneas, golden, with ruby-crimson lip.

Messrs. Sutton Bros., Hassocks, exhibited Laelio-Cattleya Soulange var. Woodside, a large, well-coloured flower.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mrs. Ethel M. Wightman, Mr. H. J. Jones, Mr. R. Findlay, Mr. J. M.

Bridgeford, Mr. W. Howe, Mr. D. Allan, Mr. Hugh Dickson, Mr. M. C. Allwood, Mr. A. E. Vasey, Mr. J. B. Riding Mr. D. B. Crane, Mrs. Lindsay Smith, Mr. G. W. Leak, Lady Beatrix Stanley and Mr. W. D. Cartwright (Secretary).

Section B.—Mr. G. Loder (in the chair), Mr. C. T. Musgrave, Mr. G. Yeld, Sir William Lawrence, Mr. A. Bedford, Mr. E. H. Wilding, Mr. T. Hay, Mr. F. G. Preston, Mr. L. R. Russell, Mr. W. B. Cranfield, Mr. James Hudson, and Mr. N. K. Gould (Secretary).

Awards of Merit.

Chrysanthemum Mayford Bronze.—A decorative variety of golden-bronze colour, suitable for garden decoration and as cut blooms; this variety is a promising sort for market growers. Shown by Mr. H. Shoesmith, Junior, Mayford, Woking.

Chrysanthemum Pearla.—A small Japanese variety of the decorative type with medium-sized blooms of a pale flesh-pink colour. The blooms are borne on very strong, stiff stems. Shown by Messrs. Cragg, Harrison and Cragg.

Scabiosa caucasica Goldingensis.—This is a very fine type of Scabiosa caucasica, with flowers of silvery-lavender colour; the plant is very vigorous in the stem and habit generally. Shown by Mr. J. Golding, Fordham, Cambridgeshire.

Cultural Commendation.

Major Fetherstonhaugh, Royal Lodge, Windsor (gr. Mr. J. Green), was awarded a Cultural Commendation for massive heads of Hydrangea paniculata, some of the inflorescences measuring fifteen inches long and nearly as much through at the base.

Groups.

Messrs. L. R. Russell, Ltd., showed a group of climbing plants, including numerous varieties of Clematis in flower, Vitis Henryi, Polygonum Baldschuanicum, Ivies and Plumbago capensis, attractively arranged with Eulalia zebrina, Ophiopogon Jaburan variegata, Nandina domestica and other pretty foliage plants.

Messrs. C. Engelmann, Ltd., showed varieties of China Asters of the Californian Giant type, in white, deep rose-pink, lavender and other shades.

The John Innes Horticultural Institute showed a collection of bi-coloured, tri-coloured and variegated Pelargoniums, including many old favourite varieties of these plants, such as Flower of Spring, Brilliantissima, Golden Christine, Mrs. Pollock, Black Vesuvius and West Brighton Gem.

Mr. F. G. Wood showed a collection of alpine plants arranged in rock work, with small Conifers at the back. Adjoining the alpines were hardy border flowers in variety. Messrs. Barr and Sons showed their fine Michaelmas Daisy Barr's Pink, which received an Award of Merit on October 3, 1922. Messrs. M. Prichard and Sons exhibited a group of hardy flowers, and Messrs. Lowe and Gibson showed Delphiniums and Gladioli. The Misses K. and E. Hopkins had a small rockery planted with alpines. A new Violet named Princess Mary was exhibited by Mr. J. J. Kettle. Mr. H. Hemsley again showed his beautiful new Sidalceas.

Messrs. I. House and Son exhibited Scabious, including S. anthemifolia rosea, also some exceptionally fine spikes of Kniphofias, and a new border pink named White Ladies.

Carnations were exhibited by Messrs. Allwood Bros., and Messrs. C. Engelmann, Ltd.

Messrs. R. H. Bath, Ltd., showed a big group of Gladioli and the rich scarlet Nerine Fothergillii major. Messrs. J. Cheal and Sons showed varieties of garden Pentstemons representing a fine strain of this useful garden flower.

Gladioli were extensively shown by Messrs. Kelway and Son, and they had in addition fine spikes of Delphinium Mrs. James Kelway, Monarch of All, Mrs. H. J. Jones, Smoke of War, and other well-known varieties.

A very imposing exhibit of Roses was staged by Mr. J. H. Pemberton; it included such sorts as Los Angeles, Betty Uprichard, Vanity, Pax, Moonlight and Prosperity.

Brunsdonna Parkeri, shown by A. Worsley, Esq., Mandeville House, Isleworth, is apparently the same plant as Amaryllis Parkeri. It had a very imposing inflorescence of some twelve or so flowers of a rosy-pink colouring, fading to white in the interior, with a distinct orange base. The exterior of the tube has very distinct lines of rose suffused with apricot; the chocolate-coloured peduncles are very distinct.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (Chairman), Mr. A. H. Pearson, Mr. P. C. M. Veitch, Mr. G. F. Tinley, Mr. F. Jordan, Mr. W. Poupart, Mr. E. A. Bunyard, Mr. H. Prince, Mr. E. Neal, Mr. Joseph Cheal, Mr. W. H. Divers and Mr. A. N. Rawes (Secretary).

Groups.

Messrs. Sutton and Sons put up a most imposing collection of vegetables, comprising 240 dishes of distinct kinds, this being one of the largest collections of vegetables the firm has ever shown. It was beautifully arranged and the variously coloured subjects were cleverly disposed to produce colour effect; indeed, the collection was as attractive as one of beautiful flowers. Along the back, against a ground of black velvet, were arranged Cauliflowers, Celeries, Leeks, Capsicums, Onions, Beetroots, Kohl Rabi and other kinds of vegetables, whilst on a raised platform covered with black velvet were disposed mounds, baskets and groups of almost every kind of vegetable the garden affords, both in and out of season. The Capsicums were a special feature, some scarlet, others golden and bright yellow. Notable dishes were New Red Intermediate Carrots and Matchless Scarlet Carrots, Ailsa Craig Onions, King Edward VII Potatos; Aubergines Long Purple and New York; Peas, Late Queen, Peerless and Gladstone; Cucumbers in variety, and there were also Parsnips, Marrows, Tomatos, Celeriac, Chinese Rose Radish, Lettuces, Cabbages and numerous others.

Messrs. Dobbie and Co. showed a collection of Potatos of outstanding merit, this being one of the largest exhibits in the hall. All the tubers were clean, shapely specimens of their varieties, which included Golden Wonder, Catriona, Witch Hill, Great Scot, The Bishop, Red King, The Ally, King Edward VII, Arran Comrade, Kerr's Pink, and most other sorts in cultivation. The difference in some of the varieties grown in ordinary soil and on the Dunbar red soil was most pronounced, in the one case the skin being white and in the other brown.

A group of hardy fruits was shown by Mr. H. Hemsley, including excellent Apples of such varieties as Gloria Mundi, Worcester Pearmain, Hoary Morning, Lady Sudeley, Warner's King, Stirling Castle, Madresfield Court and Cox's Orange Pippin; also Plums, Bullaces and Crabs.

Competitive Vegetable Classes.

Five competed in the largest class for a collection on a tabling space measuring six feet by four-and-a-half feet. All the exhibits were worthy of the occasion, but, unfortunately, one was disqualified as having thirteen Potatos in a dish instead of twelve. The first prize was awarded to the Rt. Hon. Viscount Hambleden (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, who had exceptionally fine Giant White Celery, big Tender and True Parsnips, splendid Onions of the Ailsa Craig type, New Red Intermediate Carrots; All-the-Year-Round Broccoli, Exhibition Leeks, Potatos, Cucumbers, Beans, Beets, Peas and Tomatos; second, Sir Randolf Baker, Bt. (gr. Mr. A. E. Usher), Ranston, Blandford, whose New Red Intermediate Carrots were exceptionally good. He also had good Student Parsnips, solid White Celery, and Autumn Mammoth Cauliflowers; third, Cheadle Royal Mental Hospital (gr. Mr. A. Falconer).

For a smaller collection, arranged on four-and-a-half feet frontage tabling, there were six competitors, and much the best collection was shown by the Rt. Hon. Lord Riddell (gr. Mr. A. Payne), Walton Heath Golf Club, Tadworth; Exhibition Celery, Autumn Giant Cauliflowers, Ailsa Craig Onions and The Bishop Potatos were his best dishes; second, R. Chetwynd-Stapylton, Esq. (gr. Mr. W. Meager), Berkhamsted, whose Superb Pink Celery was exceptionally good; third, Rev. Ronald Smith (gr. Mr. H. Bates), Hertingfordbury.

A very nice exhibit shown by R. H. Ling, Esq. (gr. Mr. D. W. Bedford), Berkhamsted, won the first prize in the class for a collection arranged on a table with three feet frontage. Potatos King Edward VII and Ailsa Craig Onions were his best dishes; second, R. Chetwynd-Stapylton, Esq.; third, Rev. T. G. Wyatt (gr. Mr. J. E. Shirley), Horley.

A class similar to the last was open only to amateurs who employ no whole-time gardener, and to those who employ a single-handed gardener only. Here the first prize was awarded Mr. F. Barrett, Eltham, with a very excellent exhibit of Prize Pink Celery, Autumn Queen Cauliflower, Premier Onions, Intermediate Carrots, Arran Comrade Potato and Champion Prize Leeks; second, Mr. J. Day, Berkhamsted.

Potatos.—The exhibits in the Potato classes were exceptionally numerous and occupied the whole of the tabling from one end of the hall to the other; superb produce was shown in both classes, the largest of which was for a collection of twelve distinct varieties, in which H. W. Henderson, Esq. (gr. Mr. F. L. Pike), Newbury, excelled. He had excellent tubers of The Bishop, Catriona, Majestic, Ben Lomond, Red King, Snowdrop, Tinwald Perfection, Up-to-Date, Factor, Arran Consul, Crusader and King Edward VII; second, H. J. Jones, Esq., Histon; third, Sir Charles Nall-Cain (gr. Mr. T. Pateman.)

In the smaller class for six distinct varieties, Viscount Hambleden gained the first prize with The Bishop, Arran Rose, Witch Hill, Di-Vernon, Arran Comrade and Catriona; second, H. W. Henderson, Esq.; third, Sir Randolf Baker.

Onions.—The best collection of six distinct varieties of Onions was shown by Viscount Hambleden, whose biggest bulbs were of the varieties Ailsa Craig and Cranston's Excelsior. The other sorts were Improved Reading, Silver Globe, Sutton's Globe and Crimson Globe; second, Sir Randolf Baker, whose bulbs of Ailsa Craig were very fine.

The best collection of salads in six distinct kinds were shown by Sir Joseph Tichborne, Bt. (gr. Mr. C. Goodchild), Tichborne Park, Alresford; second, Viscount Hambleden.

Single Dish Classes.

Twenty-nine classes were provided in this section, and competition in most of them was very good, there being over fifty entries in each of the Potato classes alone.

Mr. J. T. Hill, of Westbury, Wiltshire, obtained the first prize for Scarlet Runner Beans with the variety Prizewinner; no fewer than forty-four competed in this class. Only three competed in the class for French Climbing Beans, the first prize being awarded to Sir Randolf Baker for a dish of Princess of Wales. The first prize in the class for French Dwarf Beans was won by Sir Charles Nall-Cain (gr. Mr. T. Pateman), with the variety The Prince. The best dish of Globe Beets was the one shown by H. W. Henderson, Esq., of the variety Crimson Ball, and the best long Beet was exhibited by Lord Riddell who showed Black. Mr. R. H. Ling had the best Brussels Sprouts, in fine sprouts of Exhibition, and Sir Randolf Baker the best Cabbages, with fine heads of Flower of Spring. The Cheadle Royal Mental Hospital was placed first for Cauliflowers, showing remarkably fine heads of All-the-Year-Round, while Sir Randolf Baker won the premier award for Celeriac

Celery was well shown, and the first prize for a white sort was awarded to Viscount Hambleden, with the variety Giant White; the best red Celery came from Lord Riddell's gardens; the variety was Exhibition. Sir Joseph Tichborne was placed first for Cucumbers with the variety Delicacy. Leeks Prize taker, shown by Sir Randolf Baker, were adjudged the best in this class, and the first prize for Marrows went to the Cheadle Royal Mental Hospital, who staged the variety Long White. The first prize for Onions sown in the open in the autumn of 1926, was awarded to G. F. Ive, Esq., Hook Road, Surbiton, who showed Autumn Queen. For Onions sown in the open in 1927, Mr. W. Debenham, Westcombe Cottage, Hayes, Middlesex, secured the premier award with Ailsa Craig. Competition was keen in the class for Onions sown under glass, in which Viscount Hambleden was placed first with Ailsa Craig. Sir Joseph Tichborne gained the premier award for Parsnips with the variety Tender and True, while Sir Randolf Baker gained first place for Long or Intermediate Carrots with the variety New Red Intermediate. The best dish of stump-rooted or short Carrots was shown by W. N. Tyzack, Esq., High Wycombe, who staged the variety Favourite. The Cheadle Royal Mental Hospital had the best Peas, whilst the finest dish of white-fleshed Turnips came from J. Maunders, Esq., The Poplars, Oxted. The best dish of yellow-fleshed Turnips, Orange Jelly, was shown by the Cheadle Royal Mental Hospital. Red Tomatos were well shown by Sir Joseph Tichborne, who excelled with the variety Best-of-All, while the first prize for a dish of yellow Tomatos went to Mrs. Austin, Totteridge, for Golden Sunrise.

The first prize for Round Potatos was won by Viscount Hambleden, who had specimens of Arran Comrade; Mr. H. J. Jones, Rustington, Histon, won the premier award for kidney-shaped Potatos, with a splendid dish of Witch Hill.

In the class for any other vegetable, Sir Joseph Tichborne gained first prize with Aubergine Goodchild's Selected.

Obituary.

William Clark.—On Wednesday, September 7, amid every manifestation of respect and esteem, the remains of the late Mr. William Clark, gardener, were laid to rest in the beautiful Allenvale Cemetery, Aberdeen. Mr. Clark was one of the best known residents in the Bridge of Dee district, and his unassuming and kindly disposition endeared him to all his friends. His entire life was spent in the locality where for over half-a-century he served with two employers—Mr. Smith of Kaimhill, and Mr. Scott, Garthdee Gardens and Braeside Market Gardens, Mannofield, Aberdeen. Two years ago, Mr. Clark was awarded the Highland and Agricultural Society's medal for thirty-seven-and a-half years' continuous service with one employer.

Charles S. Fuidge.—It is with deep regret we learn of the death of Mr. C. S. Fuidge, who was for more than fifty years Secretary of the Southampton Royal Horticultural Society—a period which is probably a record. He died on the 1st inst., in his eighty-eighth year. Mr. Fuidge was connected with the Ordnance Survey in a professional capacity, but his great hobby was horticulture. He was elected a member of the Southampton Committee so long ago as 1867, and in the same year he won a Silver Medal, offered for the most meritorious exhibit at the Society's show. Many of our older readers will remember how successful the Southampton shows were, and how much they owed their success to Mr. Fuidge, for he was an ideal Secretary. Some idea of the importance of the Southampton shows at one time may be judged by the attendance in 1886, when 25,000 visitors were present. The shows were held at Westwood Park and also on the local pier. Unfortunately, like most societies, the Southampton Society experienced a period of difficulty during the war period, but Mr. Fuidge continued his secretarial work in spite of all difficulties.

ANSWERS TO CORRESPONDENTS.

Bay Leaves Failing.—*D. C.* There was no disease present on the Bay leaves submitted, but there were signs of scorch, due, perhaps, to syringing the plant in bright sunlight. "Frass" was present on some of the leaves so that caterpillars should be sought for; there are several species of moths which feed on this plant. Numerous scale insects were also present on the leaves, and it will be advisable to sponge the foliage in late autumn with paraffin emulsion.

Book on Wreath and Bouquet Making. *A. R.* So far as we are aware, there is no book in print dealing with the making of wreaths and bouquets.

Caterpillars on Bird Cherry.—*W. L.* The moth is one of the Small Ermine group (Hyponomeunta), but not in good enough condition to determine which of the six species. Five of them live as caterpillars on Bird Cherry, Euonymus, Sloe and other trees and shrubs, and they make a common web or nest amongst the leaves and branches. In this web, or in the vicinity of the plant in which they have fed, they spin their little shuttle-shaped cocoons, each about the size of an Oat, and the moths come out in July and August. The sixth species lives on Sedum Telephium (the wild Orpine) and is local, as are two of the others; the remaining three are common. These moths are not members of the Tortrix group, but are Tineids, allied to the clothes moths. Starlings are said to feed greedily on the larvae, but spraying forcibly with paraffin emulsion, or even clear water, will kill numbers of the caterpillars. All webs within reach should be cut off so soon as they begin to form.

Daffodil Awards at Wisley.—*Correction.* In our report of the R.H.S. awards to Daffodils at Wisley, published on page 179, a printer's error occurred. The varieties marked with an asterisk received awards as plants suitable for the garden, and not for the rock garden, as stated, with the exception of Beryl, sent by Mr. P. D. Williams, which was the only Daffodil to receive the award as a variety suitable for the rock garden.

Daisies on a Tennis Lawn.—*Unit.* Whiting, used for marking out tennis courts, is simply chalk or carbonate of lime ground very finely. It favours the growth of Daisies simply by the chemical action of the lime releasing other plant foods. It also enables grass to grow in the same way, and on some lawns where whiting has been used for some time in marking them, the grass is distinctly greener along the marked lines. This would be the case where the ground required liming. The presence of the Daisies in this case was probably due to the grass along the service lines being rather worn, and the Daisies, probably arising from seeds, have got the upper hand. The broad leaves lie flat on the ground and prevent seedling grasses, and the side-shoots of existing ones, from growing for want of light. Prunella vulgaris (Self-heal) often behaves in the same way on closely-mown lawns. Daisies are amongst the easiest of weeds to kill with lawn sand, if the latter is applied on a dry day, or when there is a prospect of two dry days. When dissolved by rain, lawn sand becomes a fertiliser; but it is desirable to get the Daisies killed first. If the dew is off the grass, so much the better. The bare parts can then be scratched with a rake, grass seed sown, thinly covered with sifted soil, and then rolled. If the lawn is not overworked by playing during the autumn, the grass should be well established before next spring. If you object to Clover on the lawn, do not use basic slag, whatever other artificial manures you may apply. When using lime for killing mossy growth, it would be good policy to lime the whole lawn, whether moss is present all over or not, to rectify acidity, which is favourable to the growth of moss. Leaf-soil and bonfire ash are richer in plant food than ashes from paper.

Destruction by Jays and Rabbits.—*B. B.* As you do not wish to kill the marauders, we fear you will find it a difficult matter to prevent them injuring your plants. To deter jays we have found it fairly effective to shoot a couple and hang them near the site of the damage. If the dead birds are suspended sufficiently high for the other birds to see before they try to alight they will, in our experience, rarely settle. If this should prove ineffective in your case and the Pyrethrums are the only plants attacked, we suggest that the bed be covered over with wire-netting. The Pyrethrums will grow through the netting, which will prevent the jays pecking out the crowns of the plants. As the garden is wired-in and rabbits are troublesome it would seem that the wiring is not efficiently done. To be effective against rabbits wire-netting must be at least three feet six inches deep, of not larger than three-quarters-inch mesh, and six inches of the netting should be sunk into the ground at a tangent. The placing of scares is no use against rabbits, which do most damage in the garden after dark. A ring of gas-tar around the Chrysanthemum beds would most likely keep the rabbits away.

Delphinium Leaves Diseased.—E. N. W. Your Delphiniums are suffering from the Black Blotch disease caused by Bacterium Delphinii. It is described in detail in the *Journal of Agricultural Research*, Vol. XXVIII, 1914, page 261. The disease is now quite common in this country, and in certain districts it is causing a great deal of damage. Collect and burn all diseased leaves and stems and spray unaffected plants with weak Bordeaux mixture or a solution of sulphide of potassium to prevent the disease from spreading.

Foliage of Cherry and Apple Trees Unhealthy.—*F. W. S.* The wood is smothered with eggs of red spider, and this pest is responsible for the bad colour of the foliage. Spray the trees with either liver of sulphur or dissolved paraffin jelly. Your best plan, however, would be to buy a ready-made specific for the destruction of red spider from the horticultural sundriesmen.

Names of Plants.—*R. L. B.* 1, Helianthus multiflorus plenus; 2, Helenium pumilum; 3, H. cupreum.—*A. S.* Abelia triflora (small-flowered shrub); Hibiscus syriacus.—*G. D.* Echinacea purpurea.—*Altho.* Pyrus baccata, the Siberian Crab, the fruits may be used for making jelly.—*T. H.* Cestrum fasciculatum.—*A. R.* Sedum stoloniferum.—*A. O.* 1, Codiaeum (Croton) undulatum; 2, and 11, C. Count Hugo; 3, C. Mars; 4 and 30, Madame de Boudney; 5, C. Souvenir de Thomas Rochford; 6, C. Prince of Wales; 7, C. Reidii; 8, C. Madame Mayne; 9, C. edmontonense; 10, C. Eugene Draps; 12, C. Bobs; 13, C. Secretaire Chevalier; 14, C. Elvira; 15, C. Countess superba; 16 and 17, C. aneitumense; 18, C. Lucy; 19, C. Countess; 20, C. Van Oosterzeei; 21 and 27, not recognised; 22, C. Her Majesty; 23, C. Fred Sander; 24, C. Lady Zetland; 25, C. Golden Ring; 26, C. Warrenii; 28, C. Baron Frank Seilliere; 29, C. Icarus.

Oleanders.—*C. F. R.* The propagation of Oleanders (Nerium Oleander) presents no difficulties. The best cuttings are those of well-ripened leading shoots, and if these are inserted singly in small pots, in sandy soil, they will root readily if kept in a close, warm frame. When rooted, place the plants in a cool greenhouse, remembering that the Oleander is almost hardy. Provide larger pots in due course, and start the plants out-of-doors in a sunny position during the summer months.

Communications Received.—W. T. B.—K. G. W.—A. G.—E. G. V.—Anxious.—E. W. D.—J. H. A.—J. E. A.—J. B.—H. M.—W. P.—T. W. B.—W. T.—G. H. D.—H. F.—P. and M.—F. R. D.—H. M.—A. B. M.—T. P.—W. F. S.—G. F. G.—J. S.—H. T. L.—R. C.—A. M. P.

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Supplementary Plate.
Water Garden at Glasnevin.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 54.5°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 21, 10 a.m. Bar. 29.8. Temp. 64°. Weather, Dull.

Dahlias.

Many years have passed since Dahlias were so popular as now, and never before have these handsome, easily-grown and decorative plants been so largely cultivated for garden decoration. Dahlia growers of long experience will remember the time when these flowers were immensely popular at exhibitions. but regarded as of little value for garden display. Those were the days when the fine old Fancy and Show varieties were grown with the utmost care and the big circular blooms, dressed by patient enthusiasts, were arranged in regular lines on show boards at the Crystal Palace and elsewhere. But at the recent splendid exhibition held by the National Dahlia Society these varieties, so beloved by old florists, were almost conspicuous by their absence, and the larger part of the display was provided by flowers of varieties which, for the most part, were produced on plants that have a distinct garden value. True, some of the Cactus varieties still hide their beautiful blooms among the foliage, but the time has long passed when Cactus varieties were regarded as fit only for exhibition purposes. Varieties of this section suitable for garden decoration are now available in plenty, nevertheless, varieties of other sections have become even more popular for brightening the garden in late summer and autumn —as witness the brilliant display of Coltness Gem and H. J. Jones in public parks in all parts of the country. The big Decorative varieties, such as Jersey Beauty, carry their flowers on long stems and attract a large amount of attention, and now that Paeony-flowered varieties hold up their heads, they, too, have become popular as garden plants. Charm, Star, Miniature-Paeony, Decorative and other sections add a diversity of form that was lacking half-a-century ago, and in each section there are flowers of rich as well as soft shades of colour. In these matters the gardener of to-day is better served than his forefathers, and yet, although older florists are somewhat scornful, the Dahlia enjoys a greater popularity for exhibition purposes than it ever did before. A few years ago the idea of growing Dahlias in pots for sale in Covent Garden Market would have been scouted and the man who put it forward would have been regarded as mentally deficient. But as genius is akin to madness, so this " mad " idea has developed into a paying business. From May onwards flowering plants, in pots, of the scarlet Coltness Gem and the yellow H. J. Jones, have been offered for sale regularly in Covent Garden Market—even to the present week—and what is more to the purpose, they have sold, and still sell, well. Young plants, not yet in flower, were also offered for sale in large numbers in the late spring, and such plants were finer than those usually sold by specialists; the varieties so offered were, of course, limited in number. Nor may the value of Dahlia flowers for house decoration be overlooked, notwithstanding the fact that as market flowers they do not meet with general approval—with one exception, and that is the pink variety Pride of Berlin, slightly larger, perhaps, but very like the old Pompon variety Nerissa. On the continent the Dahlia has been a recognised market flower for several years, and visitors to the quaint and busy little town of Aalsmeer, in Holland, would be greatly surprised to see the large quantities of Pompon and small Decorative varieties offered for sale in its markets. Both as a garden plant and as a cut flower the Dahlia is extremely popular in many continental countries, notably in Holland—where numerous Dahlia shows are held and almost every shop window has its vase of Dahlias at this season of the year—Belgium and Germany. In the United States also the Dahlia is becoming increasingly popular. In short, the Dahlia is enjoying a " boom " that it has never previously enjoyed, and grateful thanks are due to those patient raisers whose skill has made such a boom possible.

Water Garden at Glasnevin.—One of the largest collections of plants in Great Britain and Ireland is to be found at the far-famed Glasnevin Botanic Gardens, Dublin, and probably no one did more to make this collection a great one than Sir Frederick Moore, for so many years the Director of the gardens and now living at Rathfarnham, where, with Lady Moore, he finds great delight in a beautiful garden of interesting plants. Glasnevin is now under the care of Mr. Besant, who has a wide knowledge of and a great love for plants, as is shown by the skill with which everything is grown, notwithstanding many difficulties. The long walls at Glasnevin accommodate an amazingly fine collection of climbing plants, and invariably attract the attention of visitors. The rock garden is also fine, but in the late summer and early autumn the water garden is one of the most attractive features. It is—as all good water gardens should be—a combination of water gardening and bog gardening, where masses of Astilbes, Senecios, many varieties of Nymphaeas, Reeds, Kniphofias and other plants find a pleasant home and provide rich colour and grace. The garden is on natural lines and the charming informality that prevails is as pleasing as are the well-grown and well-arranged plants that, with the water, make up the scene depicted in the Supplementary Illustration that accompanies the present issue.

Holland Hall Show.—The Royal Horticultural Society's great Autumn Show will be held at Holland Park Hall, Holland Park Avenue, W., on Wednesday, Thursday and Friday, September 28, 29 and 30. On the first day, Wednesday, September 28, there will be a private view for Fellows and their friends from 9 a.m. to 12 noon. Only Fellows' and Associates' tickets will admit to the private view, but transferable as well as non-transferable tickets may be used. There will be no admission by payment on Wednesday, September 28, until 12 noon, when the exhibition will be opened to the public.

Dahlias in the Swansea Parks.—Although Dahlias are a fine feature in several of the public parks at Swansea, it is at Cwmdonkin Park that the boldest display occurs; indeed, it has been stated that this is the best display of its kind ever seen in South Wales. About two hundred varieties are cultivated, and one long border contains no fewer than six hundred plants, each variety suitably labelled. In large, adjacent beds several species are cultivated, and these, together with old and modern varieties of different sections show the progress that has been made in the development of Dahlias for garden decoration.

Captain Kingdon Ward's Tenth Expedition in Asia.—A month or so hence, Captain F. Kingdon Ward will start upon his tenth plant-collecting expedition in Asia, accompanied by Mr. Hugh Clutterbuck. Captain Kingdon Ward proposes to visit Assam—the Naga Hills—as a preliminary to exploring country that is little known so far as plant-collecting is concerned. As in the case of previous expeditions, Captain Kingdon Ward will relate the story of his travels and discoveries in *The Gardeners' Chronicle.*

Assistant Superintendent of Glasgow Parks.—The Glasgow Parks Committee, at a meeting held on Friday, unanimously agreed to appoint Mr. James W. Atkinson, Chief Assistant of the Parks Department at Blackpool, as Assistant Director of City Parks, subject to the approval of the Town Council. Mr. Atkinson was chosen from a short list of six candidates and is to enter upon his duties on November 1.

"Gartenschonheit" for September.—The September issue of our Berlin contemporary, *Gartenschonheit* contains two very pretty coloured illustrations of Dahlias—a Star variety —Mauve Star, and a duplex sort named Elfenprinz, also mauve, but of a rather paler shade. Two other coloured plates represent a bouquet of Zinnias of mixed colours, and another of variously-hued Helichrysums, with us commonly called "Everlastings," but in German rather more appropriately termed "Strohblumen," or "Straw-flowers." The issue also contains a monochrome supplement plate of a vase of mixed Asters (Michaelmas Daisies) effectively arranged. An interesting article by Alexander Steffen describes a visit the writer recently paid to England, where he visited Kew, Wisley, Covent Garden Market and many other places of horticultural interest.

Scotch Potato Crops.—According to the reports received by the Board of Agriculture for Scotland, the Potato crops are in a fairly favourable condition, although not so good as they were a month ago. In most of the important Potato growing districts the haulms are showing marked signs of blight, and in some varieties the disease is said to be spreading rapidly. In a number of the northern and western districts, however, the tubers are strong and healthy, and there is every prospect of a satisfactory crop. Yields ranging from five to ten per cent. below the normal are expected in south-west Aberdeen, south-west Forfar, north and east Perth, central Perth, north-east Fife, Berwick, Roxburgh, Selkirk, Ross, Dumbarton, Stirling and north Ayr, but in north-east Aberdeen, central Argyll, Kintyre and Bute the crop has a very promising appearance, and in these districts it is estimated that the yield will be about ten per cent. above the average. The area under Potatos this year is 146,000 acres, or 4,000 acres more than in 1926. At the first of the season's sales of maincrop growing Potatos, the average price worked out at £34 per acre, an advance on last year's average of £6 10s. 10d. Arran Consul sold from £45 to £52 per acre.

Gardeners' Festival in France.—An interesting ceremony took place at Le Petit Appeville, Normandy, on Monday, September 5, when the annual Gardeners' Festival, celebrated in France in the early autumn, was held in the small local church. The church was decorated with flowers and vegetables, and was filled to overflowing with members of the Confrérerie de St. Fiacre (the patron saint of the gardening profession). In the porch was an elaborately arranged stand of loaves of fancy bread interspersed with Asters, Dahlias and other flowers; after the service, which included a sermon exhorting those present to excel in their profession, the bread was taken from the stand and distributed to the members of the congregation.

Aldenham House Gardens.—On Saturday' October 1, by the kind permission of the Hon. Vicary Gibbs, Aldenham House Gardens, Elstree, will be open to the public on behalf of the National Council of Girls' Clubs, an organisation which affiliates National Societies and Federations of Girls' Clubs in an effort to promote the whole Club Movement and avoid overlapping. As our readers are well aware, Aldenham contains one of the largest tree and shrub collections in the world; in addition, the special feature on October 1 will be the collection of nearly two hundred varieties of Michaelmas Daisies. A small charge of 1s. will be made for admission.

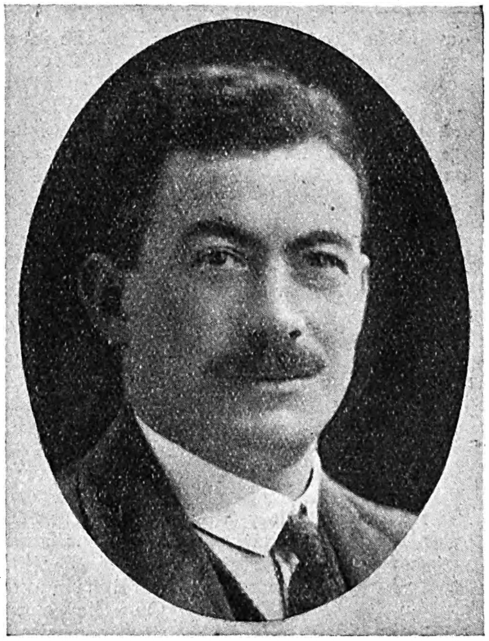
Gift of Challenge Cups.—Mr. Edwin Barnes Chairman of the Derbyshire County Council, has generously presented to the Midland Agricultural College a twenty-guinea Silver Challenge Cup, to be awarded to the best horticultural student each year, and the Rector of Sutton St. Michael's has kindly presented a Cup of similar value for the best short course agricultural student, as a thank offering for recovery from his long and serious illness. The College now possesses five twenty-guinea Challenge Cups for five groups of students.

The Brussels Botanic Garden.—The Botanic Garden at Brussels is one of the younger institutions of its kind, having been founded only in 1870. By a Royal Decree of the 30th June, 1921, the objects of the garden are defined, the first article of the Decree laying it down that its object is to furnish a scientific basis to the study of botany, and, with a view to carrying out this function, to collect both living and preserved plants of Belgium and the Belgian Congo in as complete a manner as possible. The functions of the Garden are classified under four heads: herbaria, museums, library and cultivation.

Seaweed as Food.—Mr. H. A. Hyde, Keeper of the Department of Botany, National Museum of Wales, Cardiff, writes: "The remark in your current number that 'in Europe only the inhabitants of Scandinavia use the Algae as food' appears to stand in need of a slight modification. In South Wales, red Seaweeds belonging to the genus Porphyra are collected and boiled down to make 'Laver Bread.' This substance is eaten as a condiment with fried bacon, and is to be seen regularly on sale in Cardiff market." We are obliged to Mr. Hyde for this "modification."

The late Alfred E. Prince.—Mr. Albert Upstone, Rotherham, writes, "It was with great regret that I read in your issue of last week (September 10) of the passing of Alfred Prince. We were school-mates together at Oxford, and it was with his father, the late George Prince, of seedling Briar fame, that I was placed to start my horticultural career. Alfred Prince's nature was kindly and indulgent; he was always intensely devoted to his business, and rather shrank from personal notice, preferring always to strive for the increasing success of his business rather than to be himself in the limelight. That his efforts were crowned with well-merited success is a fact with which all are cognisant."

Mr. Thomas Hopkins.—Within nine years the Swansea Public Parks Department has supplied Blackpool, Salford and Bath with Park Superintendents. The latest of these appointments is at Bath, where Mr. Thomas Hopkins will soon take up his new duties. He was appointed on the 5th inst. Mr. Hopkins has occupied various positions and was employed for several years in the gardens at Llandough Castle, Cowbridge, Glamorganshire, under the late Mr. German. Later, he became foreman in Sir Oswald Moseley's garden at Rolleston Hall, Burton-on-Trent. During the war he was with the army in France and also in Palestine, and subsequently obtained an appointment in the Swansea Parks. His skill as a cultivator and organiser fitted him for important duties and in 1914 he was appointed assistant superintendent under Mr. D. Bliss. He was selected from seventy applicants for the superintendency of the Bath Public Parks and Gardens.



MR. T. HOPKINS.

Rock and Water Gardens at Southport.—Many of our readers who visited the great exhibition at Southport in August last will be interested to learn that the rock and water gardens in competition for the Southport Challenge Trophy were judged on a system of pointing. The highest possible points obtainable were (a) the design, proportion and shape, 8 points; (b) simplicity, direction, continuity of the main lines produced by the ridges of stone (the placing of rocks and plants to convey an illusion of distance is included in this, also the design connected with any display of water), 20 points; (c) the setting of the stones (picturesque laying consistent with nature and general quiet effect), 14 points; it was insisted that great attention should be given to the placing of isolated stones, as this affects both "design" and setting; (d) the proportion of each colour used in planting the rockeries, 10 points; (e) the colours chosen in planting and their relative placing in harmony with one another, 18 points; (f) skill in regard to grass laying, careful planting, and hiding cement, background, etc., 6 points; and (g) quality, suitability, and rarity of plants, 24 points; total maximum number of points, 100. The following points—in the same order as above—were actually awarded:—First prize, £75 and Silver Perpetual Challenge Trophy (Messrs. T. R. Hayes and Sons), 7, 18, 13, 9, 17, 6, 22, total 92 points; second prize, £50 and Large Gold Medal, (Mr. K. Thirkildsen), 5, 14, 11, 10, 16, 6, 20, total 82 points; third prize, £30 and Gold Medal (Garden Supplies, Ltd.), 7, 15, 12, 8, 15, 4, 14, total 75 points; fourth prize, £20 and Silver-gilt Medal (Mr. E. J. Rigg), 6, 14, 10, 8, 15, 5, 16, total 74 points; and fifth prize, £15 and Silver Medal (Messrs. Hodsons), 6, 13, 11, 7, 15, 5, 15, total 72 points.

Liebnitz Exhibition.—The second Rose Show of the cycle of horticultural exhibitions being held at Liebnitz, in Germany, was marred by bad weather during the latter part of the time, and its success, notwithstanding this fact, was due to the excellent way in which it was organised. The centre of the hall was carpeted with green moss, against which the lovely colours of the Roses showed at their very best. Besides Roses, there were numerous groups of other seasonable flowers, such as Zinnias, Asters, Carnations, Delphiniums and Phloxes. It was intended that the cycle should close at the end of September, but it has been decided to extend it until October 2, which is the eightieth birthday of von Hindenburg, the President of the Reich, who is a patron of the Exhibition. The anniversary will be made the occasion of a festive wind-up to the exhibition, in which a military massed band concert will figure. The last of the cycle of shows, which will commence on September 27 will be an exhibition of fruit and vegetables.

Inspection and Certification of Strawberry Plants.—During the present season the Ministry of Agriculture arranged, on application, for the inspection of Strawberry plants from which runners are intended to be taken for sale, with a view to their certification as true to type. The certificates which have been issued relate solely to the purity of the stocks certified, and not to their freedom from disease, but in carrying out the inspections a careful watch has been kept for obviously unhealthy stocks, and where these have been found no certificates have been issued. A list giving the names and addresses of growers whose stocks have been certified has now been prepared, and copies can be obtained free of charge on application to the Ministry of Agriculture and Fisheries, 10, Whitehall Place, S.W.1.

Crop Production in Jamaica.—Practically the whole of the industry of Jamaica, which is the largest island in the British West Indies, is concerned with the production of crops, of which the Banana is by far the most important subject cultivated. In 1926 no fewer than 18,301,410 bunches of Bananas were exported, and it is anticipated that if favourable conditions prevail, a record of 20,000,000 stems of Bananas will be harvested in 1927. The production of coffee has declined considerably, and here the value of the Government Department of Science and Agriculture to the inhabitants is seen in the State assistance given of a free grant of 90,000 Coffee plants to the members of local branches of the Jamaica Agricultural Society, with a view to stimulating Coffee growing. Of Cacao, the output was increased from 2,600 tons to 3,000 tons last year, but fewer Coconuts were exported, although the number harvested, 23,000,000, would seem to be sufficient to satisfy all the fairs likely to be held anywhere, The chief use, however, to which the Coconut us put is not to supply amusement, but to yield Copra, of which the amount produced increased by some six-and-a-half millions pounds for the year. The islanders were also fortunate in harvesting a favourable Sugar crop, resulting in an export of 48,000 tons of Sugar, as compared with 37,700 tons in 1925, Perhaps because such a large area of North America has gone "dry," rum was stated to be in poor demand, although the official Annual Report of the Department of Agriculture puts the blame on the very high duty on spirits in the United Kingdom. We learn that the fibre industry is steadily gaining ground, and the plantations of fibre-producing plants have been extended; the local invention of a portable decorticator has greatly stimulated the prospects of growing Sisal on medium areas of land with a moderate outlay of capital. It is also gratifying to learn that the Ginger crop was good, and that the Citrus industry shows some improvement. We are not surprised to learn that the production of Grape Fruit was very greatly increased, for this member of the Citrus family is becoming increasingly popular with consumers in this country. The report also contains an account of the activities of the public gardens during the past year, and, amongst other work done by them, not the least valuable was the distribution of no fewer that 417,831 plants to the islanders, mostly of economic subjects.

The "Grand Hall du Cinquantenaire" in Brussels.—A correspondent, M. L. Linden, of Ghent, writing to our Belgian contemporary, *La Tribune Horticole*, draws attention to the fact that the International Horticultural Exhibition just over in Brussels (September 10 to 18) was not the first to take place in the Grand Hall du Cinquantenaire, a former one having been held there in 1880. That also was an international show, and appears to have been very successful. Quite a different class of plants was then popular among growers and amateurs; among those who exhibited was a lady, Madame Legrelle d'Hanis, whose favourite plants were Marantas, cultivated as specimens. She also exhibited Alocasias, Colocasias and Caladiums, wonderfully grown. The chief interest of the show, however, was the friendly rivalry shown between those two great Belgian firms, Van Houtte and Linden. The writer recalls the two superb groups of stove foliage plants which were of such outstanding merit that it was difficult for the Jury to choose between them, and also the wonderful Orchids cultivated to a pitch now seldom seen. Probably few who attended the Brussels Exhibition this year were able to say that they had been present, much less that they had exhibited, and had carried off the premier honours, in 1880!

French Chrysanthemum Congress.—The twenty-seventh Annual Congress of the French Chrysanthemum Society is to be held at Paris this year, from October 26 to 28, and will coincide with the Centenary Autumn Horticultural Exhibition to be arranged by the French National Horticultural Society. Chrysanthemums will, of course, form a special feature at the exhibition, which is expected to arouse considerable interest among both growers and the general public. The Congress will be formally opened on Wednesday, October 26, at 9.30 a.m., at the offices of the Société Nationale d'Horticulture de France, 84, Rue de Grenelle, Paris, under the Presidency of the Minister of Agriculture, and a second session will take place in the afternoon, commencing at 3 p.m. On Friday, October 28, at 2 p.m., the exhibition will be opened at Cours la Reine; and Saturday will be pleasantly occupied by excursions, in the morning, to the municipal nurseries of Paris, at Auteuil, and in the afternoon to the Reuilly establishment of Messrs. Vilmorin, Andrieux et Cie. At 9 p.m., there will be a reception at the offices of the Société Nationale, Rue de Grenelle. The subjects for discussion at the Congress include the use of sulphur in composts; the use of fertilisers in the open; pests and diseases; and suggested modifications in the mode of nomination and functions of the Floral Committee. A number of valuable Cups and other prizes will be competed for by Chrysanthemum growers at the autumn exhibition, including the "Coupe C.P.," given by the Comptoir Parisien d'Engrais, which is not, however, actually a cup, but a prize to the value of 1,000 francs to be divided among four growers of the most remarkable varieties; the Prix Gaston Clément, value 200 francs, for the most interesting new variety shown during 1927; the Prix Paul Féron, 100 francs; prix Charles Souchet, 100 francs; and prix Auguste Nonin 100 francs. The Société Francaise des Chrysanthémistes is also offering a prize of 200 francs to the grower obtaining the greatest number of Certificates of Merit.

Appointments for the Ensuing Week.—Monday, September 26: National Chrysanthemum Society's Floral and Executive Committees meet. Wednesday, September 28: Royal Horticultural Society's Autumn Exhibition at Holland Park Hall (three days). Thursday, September 29: Paisley Florists' Society's meeting. Friday, September 30; Carluke Chrysanthemum Society's show. Saturday, October 1: Wallington Horticultural Society's show; Blackburn and District Horticultural Society's meeting.

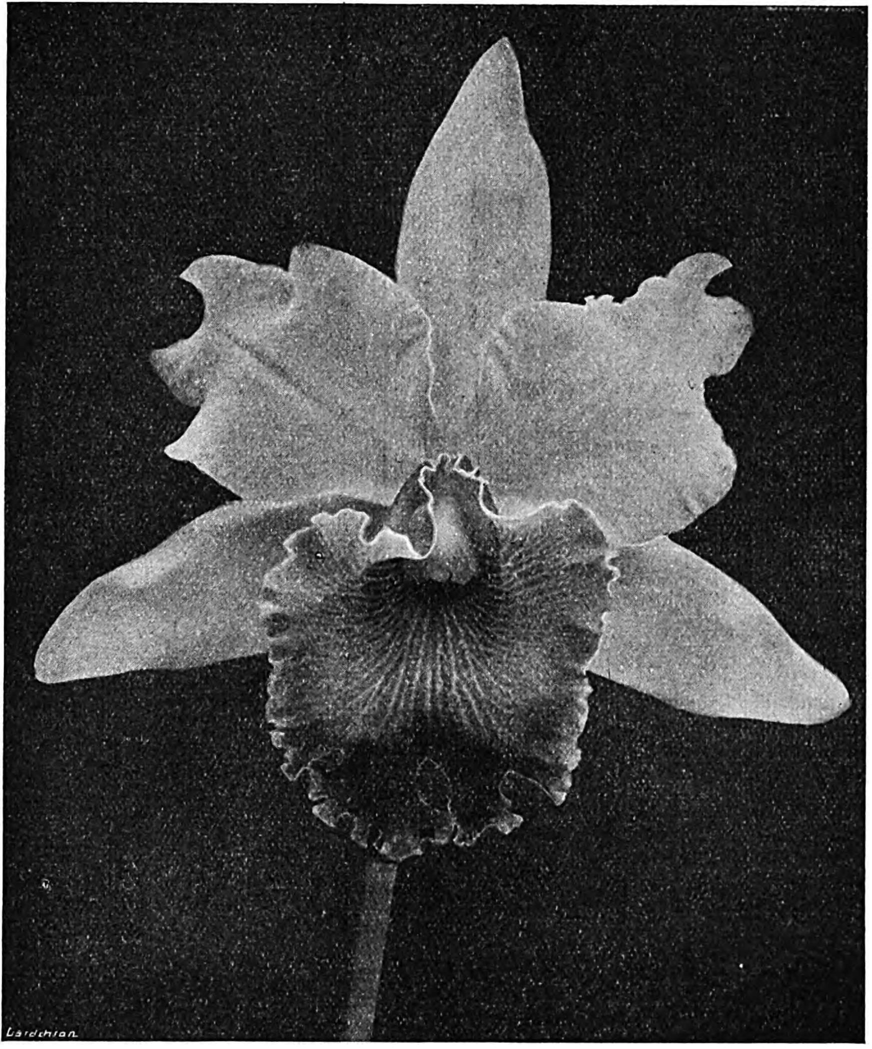


FIG. 109.—CATTLEYA HOROS.

R.H.S. Award of Merit, Sept. 13. Flowers golden-orange and cerise. Shown by Baron Bruno Schröder. (see p. 236).

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Black and Green Teas of Commerce, by Dr. Royle.*—It was a remarkable fact that the subject of the difference between the black and green teas had been, until recently, a matter of great uncertainty. The Jesuits, who had penetrated into China, and Mr. Pigou, were of opinion that both the black and green teas were produced from the same plant, while Mr. Reeve believed that they were manufactured from two distinct plants. Now as regarded himself, he (Dr. Royle) had adopted the view that the best kinds of black and green tea were made from different plants; and examination of tea samples seemed to confirm that view, but a repetition of the experiment had not done so. Mr. Fortune, subsequent to the China war, having been sent out to China by the Horticultural Society of England, made inquiries on the subject. He there found the Thea bohea in the southern parts of China employed for making black tea; and in proceeding as far north as Shanghai, he found the Thea viridis used in making green tea near the districts where the best green tea was made. So far, therefore, the information obtained seemed to confirm the view of two different species of Thea being employed to make the two different kinds of tea; but Mr. Fortune, in visiting the district of Fokien, was surprised to find what he conceived to be the true Thea viridis employed in making *black* tea in districts near where the best black tea was made. He took plants with him from Fokien to Shanghai, and could find no difference between them. It was still, however, desirable to get specimens from the district where the black and green teas of commerce were actually made, and this had latterly been effected. In consequence of the great success which had attended the experimental culture of tea in the nurseries established in the Himalayas, Mr. Fortune was again sent to China by the East India Company. He proceeded to the northern parts of the country, in order to obtain tea seeds and plants of the best description, as the most likely to stand the Himalaya climate. Mr. Fortune procured seeds and plants in great numbers, and sent them to the Himalayas, where they had been since cultivated. When he had reached Calcutta, the tea manufacturers, whom he had brought with him, made from plants in the Botanic Gardens their black and green tea from the same specimens; so that it was evident it was the process of manufacture, and not the plant itself, that produced the green tea. *British Association Gard. Chron., September 25, 1852.*

The Week's Work.

THE ORCHID HOUSES.

By J. T. BARKER, Dunstable, Bedfordshire.

Masdevallia.—The strong-growing species of Masdevallia, such as M. Harryana and M. Veitchii, comprise plants that were at one time more appreciated than any other Orchids. It is advisable to examine the whole of the stock and repot any plants that require it, or to resurface where this only is necessary.

Compost.—The compost should consist of good fibrous peat, A.1. fibre and Sphagnum-moss in equal parts, with sufficient broken crocks to render the whole porous. The fibre used in the compost should be thoroughly cleared of all earthy particles, as these plants, when well-rooted, require an abundance of water. Ordinary flower pots are suitable for such as can be accommodated in reasonable-sized pots, but large specimens are best grown in deep pans, or half-pots, as they are sometimes termed. Which ever receptacles are used, the drainage should be perfect. Certain species of Masdevallia have stronger growth and more robust roots than others, and these should be given slightly more pot-room than those of a less robust constitution, but over-potting is harmful. Whenever a plant shows signs of decay in the centre it should be broken up, and the old, decayed rhizome removed. The outer parts that are sound and vigorous may be remade into a specimen, or potted separately, according to requirements.

Remaking Specimens. — In arranging the portions to make one large specimen, make quite sure there is new rooting-material between the sections as they are placed together. By arranging the portions together in this way it is possible for the plants to develop in every direction in a natural manner.

Repotting.—Plants that are in a thoroughly sound state, with good centres, will be benefited by shifting them into larger pots, being careful to disentangle the roots, and remove all sour and decomposed rooting-material. If any of the stronger growers have made a large number of roots and are not afforded new rooting material there is a danger of the plants presenting a sickly, unhealthy appearance before another season comes round, and it is always much easier to keep a healthy plant in sound condition than to nurse an unhealthy one back to good health. Masdevallias grow best in a rather shady part of the cool or Odontoglossum house, in a position near to the roof-glass, where they may be shaded from strong sunshine. Although they enjoy plenty of light, they are not capable of withstanding the strong rays or the heat of the sun, as they require a cool, humid atmosphere the whole year round. Thrips, which disfigure the foliage, and in the end eventually ruin the plants, must be constantly searched for, and on the first appearance of the pest the house should be vaporised, which is the cheapest means of cleansing a house of plants of various insect pests.

THE KITCHEN GARDEN.

By R. H. CROCKFORD, Gardener to THE RT. HON. LORD WAVERTREE, Horsley Hall, Gresford, N. Wales.

Leeks.—Where this useful vegetable is growing in trenches more soil should be worked around the stems to bleach them. If the leaves become very long their ends may be shortened to prevent worms from drawing them into the earth. The same care should be exercised in the case of plants grown on the flat. Hoeing between the rows will favour the growth of the plants as well as keep down weeds. Leeks which are being grown for autumn exhibitions should have attained their full length by now, and care should be taken to prevent the soil from splashing into the tops of the stems. Continue to feed the roots outside the boards or planks supporting the earth, with liquid manure, or a good fertiliser, until the plants have grown to full size. Watch carefully for caterpillars, which may often be found feeding on the leaves and sometimes in the crown, thereby spoiling the whole plant.

Potatos.—Every opportunity should be taken to lift and store the tubers so soon as they are ready, or many may become diseased, especially on wet land. When storing Potatos discard any which show the slightest trace of disease, or the latter will spread throughout the clamp. The tubers should be lightly dusted with slaked lime when any fear of disease is anticipated.

Celery.—Extra precautionary measures should be taken during this particularly dull and wet season to prevent disease from spreading on Celery. I have used green precipitated sulphur with great success, and find it an excellent remedy. It should be dusted over the entire plants by means of a blower, or dry spray distributor, repeating the process every ten days, or even oftener, if the weather is very wet. Celery growing in these gardens, in a cold, heavy, wet soil, is free from disease at the time of writing.

Endives and Lettuce.—Continue to plant these salads in cold frames. No attempt should be made to coddle the plants, but allow them to grow as hardily as possible, and keep the lights off the frame for the present.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to COLONEL SPENDER CLAY, M.P., Ford Manor, Lingfield, Surrey.

Early Peaches.—Where the removal of any of the trees is contemplated, all preliminary operations, including the preparation of the compost, should now be proceeded with. The need for good drainage is imperative, and where the soil is a strong, calcareous loam, gritty matter of some kind, such as old lime rubble, should be added to render the texture porous. Trees to be transplanted and expected to fruit next season should have been lifted or root-pruned last autumn; provided they are under glass, they may be removed with safety any time in September. It is always wise to grow a number of young trees against a wall as reserve stock, and when these are planted to replace them with younger trees from the nurseryman. Such trees may be kept trained and in a suitable condition for lifting, shortening the roots annually and replanting them in poor, rather than rich, compost, until they are six or seven years old.

Root-pruning.—Any trees that require root-pruning or lifting should now be attended to, and with careful attention to shading and syringing of the foliage, they will be fit for starting at the usual time. Shorten nearly all the strong roots to within six inches of their origin and relay the fibrous ones in fresh loam. Occasionally it may be necessary to remove a good deal of the surface soil and substitute fresh compost, as the hard soil about the roots of old trees often becomes dry, and many cases of bud dropping may be traced to drought. Give the roots one or two good soakings with water before lifting is attempted, then do the work carefully and quickly. When the tree is placed in position and the shoots tied loosely to allow for the soil settling, the latter should be thoroughly washed in amongst the root fibres with tepid water. All trees, no matter how old, should be detached from the trellis and carefully washed with strong, soapy water and sulphur; the wires and woodwork should also be washed with this mixture.

Successional Houses.—The roots of fruit trees in successional houses should be kept thoroughly moist, certainly until the leaves fall, when the trees should be cleansed and the house kept freely ventilated until the time arrives for starting them into growth again.

Late Houses.—So soon as the trees in late houses are cleared of their crops, wash them well with the hose. Close the house with sun-heat on fine afternoons until the wood is ripe, and keep the atmosphere dry. Much may be done to ensure the ripening of the wood by thinning the shoots to allow light and air to enter freely. A little fire-heat will do no harm, provided ventilation is given on a liberal scale.

Winter Cucumbers.—Make preparations for obtaining a supply of Cucumbers throughout the winter. This crop usually follows the second crop of Melons, and the house is generally infested with spider and other insects. First remove the old soil and the fermenting materials of the old hot-bed. Cleanse the glass and paint with warm, soapy water, and coat the walls with boiling water, quicklime and sulphur. Sufficient fermenting materials and compost should be prepared in readiness for planting. The soil should be dry and free from worms. A liberal dressing of soot will destroy worms, and if the compost is poor it may be enriched with bone-meal in preference to animal manure.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD Wrotham Park, Barnet, Middlesex.

Strawberry Beds.—Not for three seasons have Strawberry plants grown so freely as they have this year. Both old and young plants are looking exceptionally healthy, and only sunshine is needed to assist the plants in building up firm growth and well-developed crowns. Perfect maturity of growth will also lessen the danger of injury by severe frosts. Keep all plants intended for fruiting free from runners and the beds from weeds. If the land is of a light and porous texture mulching the ground with manure will greatly benefit the plants. Keep Strawberries in nursery beds free from both runners and weeds. The more forward runners may be lifted with a ball of soil adhering to the roots and planted afresh.

Gooseberry Bushes.—The bushes have made good growth, notwithstanding the heavy crops they have produced. If the shoots are very crowded, the present is a suitable time to thin out any that can be spared. All fruit-bearing shoots should be freely exposed to both sun and air to favour the ripening of the wood before the end of the season. By thinning the shoots at the present time the need for winter pruning will be greatly reduced. Do not shorten the fruiting wood but simply open out the heads of the bushes now and complete the work of pruning at a later period. Young bushes planted on suitably prepared land, will, if the autumn proves favourable, furnish a fairly good yield of fruits next summer.

PLANTS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Chrysanthemums.—Plants that are being grown to produce large blooms should be placed under glass. It is not advisable to house Chrysanthemums too early, but, as a rule, after this date the plants are no longer safe from frost, and as many varieties are showing colour, the night dews will spoil the florets, the injury showing at a later date. The late-flowering varieties are best kept out-of-doors as late as possible, otherwise growth will be weak and the flowers of poor quality. It is, however, always wise to have some protective material near at hand, and at the first sign of a sharp frost to remove the plants to safety. After housing the plants a watch should be kept for mildew, and the affected parts dusted with sulphur on the undersides as well as the upper-surfaces of the foliage. Fumigate the plants on two or three occasions to keep aphis in check, this pest being always more prevalent in wet than in dry seasons.

Violets.—Plants that have been grown outside to produce flowers during the winter and spring may now be lifted and replanted in frames.

It sometimes happens that September is very hot, and if the plants are not lifted carefully the foliage may flag considerably, followed by damping. Should the weather be dry at the time of lifting the plant's roots should be well watered. Remove all runners before planting, and should red spider be in evidence, dip the plants in a suitable insecticide, taking care to wet the underside of the leaves. Violets grow best in a light compost containing bone-meal and wood-ash. Plant moderately firmly and see that the crown is level with the soil. The space between each plant will depend entirely on their size; as a guide, I recommend putting them five inches asunder. Should the weather be showery at the time of planting, the lights should be left off the frames, but if it is hot and dry place them in position and afford slight shade to enable the plants to recover quickly from the disturbance.

Caladiums.—These plants are past their best and to ensure perfectly ripened growths, water should be withheld gradually. It is not advisable to dry these plants off too drastically, otherwise the tubers will fail to mature properly. Much of next season's success will depend on the treatment extended to them during the ripening stage. When the foliage is completely died down, the tubers should be stored under a stage in a moderately warm house where the night temperature never falls below 50°. The tubers will keep best in the receptacles they are growing in, the soil affording sufficient moisture to prevent shrivelling. When shrivelling occurs the tubers rarely recover, and will be found to rot when starting them into growth next season.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Phlox decussata.—When these plants have finished flowering, a good supply of cuttings may be obtained. Cuttings inserted in a bed of sandy soil in cold frames soon form roots and will be ready for planting out next spring. Much better results are obtained by raising young, healthy stock from cuttings than by dividing the old plants; there is also less danger of attacks by eelworm, which may, to a certain extent, be kept in check by liming the soil and by changing the site of the plants. Seeds should be saved from good varieties, sown at once, in pans or boxes, and germinated in a cold frame. The germination of Phlox seed is somewhat slow and uncertain, but if sown when ripe the young plants should be ready for planting out next spring in the reserve garden, or even in the garden proper, as they give a fine display their first season.

Rose Cuttings.—Many varieties of garden Roses may be raised successfully from cuttings inserted out-of-doors during October. A sheltered, west border is very suitable for this purpose. Make the cuttings from old flowering shoots, as such growth is fairly firm. They should be taken off with a heel, which should be trimmed smoothly and none of the lower buds should be cut out. The cuttings may be made from four inches to six inches long, and lined out in the same way as Gooseberry cuttings, treading them in the soil firmly. After frosty weather it will be necessary to examine them, for frost partly lifts them up leaving the base of the cutting clear of the ground. In such cases they should be trodden firmly in again. Although most Rose cuttings will form roots not all of them will grow; some varieties may make a bundle of fine roots but little or no top growth. Nearly all the rambling Roses and the dwarf polyantha varieties are easily raised from cuttings.

Hibiscus syriacus (syn. Althaea frutex).—This handsome flowering shrub makes a fine display late in the season, especially in the warmer parts of the country. There are numbers of varieties, both single and double-flowered; the single-flowered Celeste is especially beautiful, the flowers being a pleasing shade of blue. The Hibiscus enjoys a sunny situation and a rich, moist, well-drained soil. It is readily increased by means of cuttings inserted during the summer or autumn, when they may be rooted in a close case, or the plant may be increased by grafting on portions of the roots during the spring.

Zephyranthes candida.—This bulb has white, Crocus-like flowers, and at the time of writing is in full bloom. Here, at Kew, many hundreds of yards of it are used as edgings to paths and borders around the plant houses and also in the open. Zephyranthes candida is a native of the Argentine; it has graceful, evergreen foliage, and flowers with wonderful profusion. It increases very rapidly and may be planted at any time, except, perhaps, during the dead of winter.

Hedges.—Where hedges were trimmed earlier in the season they will now, in most cases, require to be gone over the second time. Holly and Yew hedges should be trimmed at this season. Holly is usually clipped; but if time can be spared it is better to trim the growths with a knife or secateurs.

General Remarks.—Complete the work of pruning and tying rambling Roses. The young shoots of climbing Roses trained on pillars or pergolas should be secured to the supports to prevent them being broken or damaged by high winds. Herbaceous borders and flower beds generally should be kept tidy; trim off spent flowers and keep the plants staked and tied neatly. Where groups of annuals and other early-flowering subjects are finished the blank spaces may be filled with hardy Chrysanthemums and Michaelmas Daisies that have been grown in the reserve garden for the purpose. All climbers and shrubs grown and trained on walls should be examined and made secure against high winds, pruning them back where they are exceeding their prescribed limits.

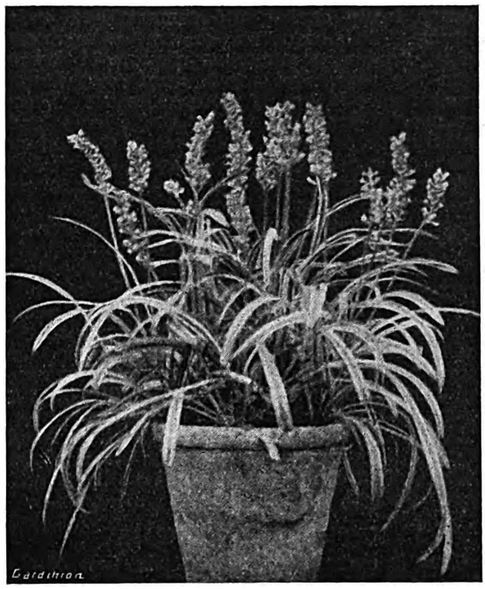


FIG. 110.—OPHIOPOGON JABURAN VARIEGATUS (see p. 244).

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Cuttings in Frames.—The cuttings of many kinds of summer bedding plants and those of Pentstemons, Calceolarias, Nepeta, Myosotis, etc., should be inserted without further delay. In some districts Pentstemons are infected with a disease which attacks the foliage, leaving it brown and hard, and in consequence growth is arrested. Infected plants do not produce cuttings in quantity like the healthy ones, but where it is necessary to propagate any variety showing traces of this disease, the cuttings after insertion should be sprayed occasionally with a weak solution of sulphide of potassium. This treatment may be applied to any kind of cuttings which are doubtfully diseased; Violas are sometimes attacked by a leaf-spot fungus, which, in the close atmosphere of a shaded frame spreads with great rapidity and leaves many blanks among the cuttings. The newer hybrid Calceolarias have been quite satisfactory out-of-doors this summer, and where cuttings of these are procurable they should be rooted in the usual way to produce good plants for next season, while the stools may be lifted and potted to furnish early-flowering plants under glass. The preparation of the frames for the reception of the cuttings should be done carefully, and liberal supplies of leaf-soil added where necessary, making the bed firm by treading, and surfacing the whole with a good layer of sand. The sashes which have been stored during the summer should be washed with hot water mixed with soap and paraffin, and the glass well rinsed with clean water. When they are dry, cracked panes or loose putty should be made good.

Housing Plants.—Many kinds of plants which may be grown in frames or out-of-doors with advantage during the summer should be brought indoors, where they can be kept at least free from frost. They include Zonal Pelargoniums, Salvias, Chrysanthemums and Richardias. As the various houses containing crops of Melons, Cucumbers and Tomatos are cleared and cleansed they may be filled with winter-flowering plants. When the plants are taken indoors, leave the ventilators open night and day for a time unless frost threatens, in order that the plants may become accustomed gradually to their new conditions. Keep a sharp watch for insect pests, and fumigate the houses on their first appearance, and subsequently as found necessary.

Gathering Fruits.—The earlier varieties of Pears, such as Beurré Giffard, Jargonelle, Dr. Jules Guyot and Clapp's Favourite, have already been harvested, and the second-early sorts now require attention. These include such well-known varieties as Beurré d'Amanlis, Williams's Bon Chrêtien, Pitmaston Duchess, Marguerite Marillat and Souvenir de Congres. As a general rule the fruits near the top of the trees ripen first, whether in the open or against a wall, and these should be removed from the trees wherever it is found that by raising the fruits to a horizontal position the stalks part readily from the spur, leaving any which do not and replacing the nets for a few days, when the fruits should be tried again. Label the various sorts distinctly when laying them on the fruit-room shelves, and allow sufficient space for each variety so that the later fruits may all be accommodated together. It is also a help to put on the labels the approximate season when the different varieties may be in a fit condition to send to the table, and a close watch kept on the later sorts, securing them in a like manner when ready. Where wasps are troublesome among late fruits they should be traced to their nests and destroyed by cyanide of potassium, which, however, should only be used by those who realise its power and the danger involved in using it.

Celery and Leeks.—These winter vegetables should now be well earthed up to protect and blanch the stems. Celery for market is largely grown on the flat, and when a plough can be used to throw up the soil against the plants the earthing-up is soon completed. With trenches more care is necessary to keep the fine soil from getting into the hearts of the plants, which should be tied together with raffia before earthing-up begins. On heavy soils which are infested with slugs, Celery is a most disappointing crop, as these pests are difficult to eradicate, and lime, soot or alum, unless applied frequently, soon lose their effectiveness. Grown in sandy soil near the shore, Celery is one of the easiest and most satisfactory crops to cultivate, and the heads when dug are clean and spotless. In earthing-up the general crops of Leeks, it is sufficient to stir the soil deeply between the rows and draw the loose soil up to the plants on either side with a hoe, thus adding a few inches to the blanched portion which is underground.

INDOOR PLANTS.

OPHIOPOGON JABURAN VARIEGATUS.

This is not a very old greenhouse subject, its introduction from Japan dating back only sixty-four years, which fact, no doubt accounts for the plant being little known in some gardens. Its variegation renders it at all times a more or less useful plant for decoration under glass, while it stands well when used as a pot plant for the dwelling. The colouring of the foliage improves wonderfully after the completion of the new growths, and is, in the writer's opinion, quite equal to that of some Codiaeums. To add to the value and usefulness of this plant it sends up, annually, a number of slender spikes of blue flowers during August or September (Fig. 110), p.243. The flowers are not long-lived; never the less they are a source of beauty and add an interest to the greenhouse at this season.

Given light soil and a warm situation, this Ophiopogon will succeed out-of-doors during the summer months, but it always strikes me as being more at home in a slightly heated greenhouse. Plants may be divided after flowering, if increase is desired. *C. T., Ampthill Park.*

MIGNONETTE IN POTS.

It has often been said that only one gardener in ten is able to grow Mignonette in pots to perfection. While this is possibly an exaggeration, it is nevertheless true that many fail to obtain good results.

Mignonette is so useful and popular as a pot plant, that every effort should be made to ensure its success. The usual time to sow seeds for the spring batches is during August and September. Mignonette resents root disturbance and loose potting, so the best method of procedure is to sow the seeds in the receptacles in which the plants are to flower. A small portion of the batch may be grown in forty-eight-sized pots and the bulk in thirty-two's. Those grown in the larger size usually make the best specimens, but the smaller pots are often more suitable for general use.

The potting compost used should consist of four parts loam, one part decayed leaf-mould, and a half part of sifted manure from an old Mushroom bed. To each bushel of this compost add a four-inch potful of bone-meal, a similar quantity of wood-ash, and a liberal sprinkling of sifted lime rubble. The whole should be turned several times and thoroughly mixed a few days before required for use. The soil must be rammed firmly before sowing the seeds, using a potting stick for this purpose and following with a good soaking of water. After the moisture has drained away, sow from a dozen to twenty seeds in each receptacle, and lightly cover them with compost applied through a fine sieve.

The pots may be placed in a cold frame and kept shaded until germination takes place, when exposure to light is necessary; grow the seedlings as hardily as possible, and when they are an inch or so high, reduce them to five in each pot.

After October the batch may be removed to a shelf in a greenhouse from which frost can be excluded, and the plants grown on steadily through the winter months. When the roots have taken full possession of the soil, clear soot-water, or some other weak stimulant, may be applied. A neat stake should be placed to each plant before it becomes tall enough to fall over.

Most of the giant-flowering strains are suitable for pot culture, and when their period of usefulness in the house or conservatory has passed, they may be cut back and removed to a cold frame. When they have been hardened off the plants may be turned out of their pots without breaking the ball of soil, and planted in a position out-of-doors, in firm, rich ground. If put out at the end of May these will flower before the spring-sown seedlings, and will continue to supply flowers until the autumn, provided they are cut over occasionally and the old flower spikes removed. *Charles Hodgson, Acton Place Gardens, Sudbury, Suffolk.*

ALPINE GARDEN.

ORCHIS FOLIOSA.

One of the most delightful of hardy Orchises is the Madeiran Orchis foliosa, but, unfortunately, it is not always the easiest of plants to manage. At Kew it is planted in a low-lying bay in the rock garden (Fig. 113, p. 249), where it flourishes in a sheltered and sunny position. In this position, although the site is well-drained, the plants receive a fair amount of moisture and a good deal of rain is shed on the site by the rocks above. Suitable soil for Orchis foliosa appears to be a mixture of peat, sand and leaf-mould. Even under the best conditions, however, it rarely carries spikes so tall as two feet seven inches, which is the height recorded of a specimen gathered in Madeira by Mr. Lowe (*Bot. Mag.*, t. 5074). But even if only half so tall, its spikes of purple flowers are a delight in any garden. Orchis foliosa used to grow well at Straffan, under the late Mr. Bedford's care, as, indeed, did many hardy Orchids, notably the handsome Cypripedium spectabile. *K.*

ASTILBE CHINENSIS PUMILA.

This dwarf, herbaceous perennial is suitable for the bog-garden or for cool, moist places in the rock garden, and is of special value in that it flowers freely during late summer and early autumn. It is hardy and of compact and neat habit, producing numerous clusters of leaves from the centres of which arise erect flower stems twelve inches or more in height. These are usually furnished with a single leaf about half-way up, and are thickly covered with brown hairs. The rich rose-purple flowers are packed closely together on branched spikes, six inches or more in length. The radical leaves are tri-pinnate and about seven inches in length; the grooved stalks are red-tinted and sparingly clothed with rough, fibre-like hairs. The light green leaflets are ovate and sharply pointed, the margins sharply toothed and tinted with red. The cauline leaves are much smaller than the radical foliage, but are of similar shape, the margins being finely toothed and conspicuously red tinted, while the hairs, especially on the stalks and undersides are much thicker.

This Astilbe delights in deep, rich soil and abundant moisture. It is easily increased by division, and comes practically true from seed. *A. G. Forsyth, Wisley.*

HYPERICUM REPTANS.

This is undoubtedly one of the best of the dwarfer St. John's Worts, and I know of no other prostrate species to rival it in general garden merit. A native of Sikkim, it is, perhaps, not absolutely hardy everywhere, but in a really free, gritty soil with a broad, flat rock slightly inclined in a southerly aspect, for it to creep over, H. reptans usually survives the winter.

A well-grown plant will eventually cover several square feet with a dense, one-inch carpet of a delicate, fresh green, often more or less flecked with touches of orange.

The flowers, which are fully an inch across, lie upon this green carpet, and they are a rich golden yellow, not infrequently streaked with crimson, while the buds are a glossy vermilion just before they expand.

The blooming season, unlike that of so many of the lesser Hypericums, continues in full vigour throughout the summer and well into the autumn. Cuttings strike readily at this season, and as growth is rapid, these make good flowering plants the following year. In districts where the plant is liable to suffer from wet and cold in winter, it should be afforded protection with a sheet of glass arranged above it. *A. T. J.*

ERYNGIUM PROSTRATUM.

The tiny Eryngium prostratum, which is surely the very smallest of the Sea Hollies, is at present in bloom as this is written (September 16), and is the object of considerable interest and curiosity. I am assured that it is perfectly hardy, but, as it comes from Texas, I should like to reserve judgment on this question until this winter has passed. Should it prove hardy it will be one of the pleasing curiosities of the rock garden—and all curious plants are not pleasing. It is about four inches high only, and has small, spiny leaves on a rosette-like plant, and from this tuft emerge the prostrate stems carrying the tiny flowers, which in form present all the characteristics of the taller Sea Hollies, and are of a pretty blue-grey colour.

It is not, of course, a showy or eye-attracting subject, but it is one full of miniature beauty, and cannot fail to be of special interest to the many admirers of the larger Sea Hollies. Mr. Reginald Farrer was doubtful of its hardiness, or, otherwise, considered it might be only a biennial, like E. giganteum. Although E. prostratum loves damp places in its native country of Texas, it will probably require a moderately moist soil only in this country, except in the south of England.

SISYRINCHIUM CALIFORNICUM.

The Californian Satin Flower is an attractive border or rock garden plant, and is hardier than is generally believed. It is not so attractive as either S. grandiflorum or S. filiferum, but it is of elegant habit and the yellow flowers are very pretty. The plant grows about twelve inches high and usually flowers in June, but this year my specimen only came into bloom in July, and it is still giving a number of its light yellow flowers above the pleasing, Rush-like leaves, and promises to bloom for some time yet. Sisyrinchium grandiflorum requires a sunny situation and a dry soil. *S. Arnott.*

A REVISION OF VIOLAS

(*Continued from page* 229).

V. nebrodensis, Presl., is a dwarf, almost stemless plant, with one to three yellow or pale violet flowers on long peduncles, with the spur rather thick and obtuse but longer even than in V. calcarata, and the lowermost petal more rounded. The leaves form almost rosettes and are ovate, crenate, almost glabrous, obtuse, the lower ones narrowing into long petioles. The stipules are pinnately divided into one or two short, linear lobes on either side of the long leaf-like, central segment. Its characters thus separate it from the Calcaratae group; V. nebrodensis takes its name from the Nebrodes or Madonia Mountains in Sicily, where it grows at between 5,500 and 6,300 feet. A yellow form (sub. sp. lutea) which is downy and has leaves cordate or oblong at the base, is found in grassy places about 4,000 feet above Palermo; and a pale violet form (sub. sp. grandiflora) which is taller, has larger flowers and a shorter spur, leaves flatly cordate and very large stipules, occurs on shady limestone rocks at about 2,900 feet in the same district.

V. nephrophylla, Greene, belonging to the same section as V. cucullata, grows in boggy places by the sides of rivers and lakes from Newfoundland and Connecticut along both sides of the frontier to the Pacific Uplands, then south along the Rockies to the borders of Mexico. It thus has probably a wider range than any other North American Violet. The type was collected by Greene in dry thickets in Colorado, so the species is apparently not exclusively a bog plant. The large violet flowers are held well above the pale green leaves.

V. nevadensis, Boiss., should be V. crassiuscula, Bory, and is akin, as Farrer suggests, to V. crassifolia, though the former is found on the Sierra Nevada in the south of Spain and the latter in Armenia. It is a Cenisia Viola, but sends up numerous, long, slender stems, leafless at the base, with entire, round-ovate, glabrous or minutely pubescent leaves on petioles longer than the blade, with stipules that are quite leaf-like and never have lateral lobes, a very short, obtuse spur, and rounded petals that vary from the coerulean of V. cenisia to violet, and may be reddish or white. It has hitherto been reputed to grow in the highest screes of the Sierra Nevada from just below 10,000 to over 11,000 feet, but Mr. Lofthouse has on several occasions in recent years collected it at much lower altitudes. He has distributed seeds, some of which, I understand, are giving good results. *E. Enever Todd, Lt.-Col.*

(*To be continued*).

FLOWER GARDEN.

TRIENTALIS EUROPAEA.

Those who are planting woodland gardens, or any cool, partially-shaded spot, during the coming season, should not overlook the merits of this Trientalis. Rare native plants are always interesting in the garden, and Trientalis europaea is not only an uncommon wildling, but is possessed of singular elegance and beauty. It grows to a rather lesser height than a Wood Anemone and has much the same poise.

The slender stem carries a single whorl of lanceolate leaves, above which the flowers are held on delicate, hair-like stalks. Though small, these pure-white, starry blossoms are very bright, and have a distinct air of refinement and quality.

T. europaea belongs to the natural order Primulaceae; it is an excellent little plant for associating with dwarf Ferns, the smaller, shade-loving Anemones, and other lowly herbs which enjoy a free but moist vegetable loam. There is an American form of T. europaea which is said to be larger in all its parts than our own, but of this I have had no experience.

TRITONIA ROSEA.

This South African plant, closely allied to Montbretia, and sometimes known as M. rosea, is not common in gardens generally, yet it is quite hardy in all but the coldest localities. As a matter of fact it is very much more reliable and permanent in the borders here than any of the newer, large-flowered Montbretias.

T. rosea needs to be grown in a free soil of a gritty or sandy nature. With me, it never increases to the extent of becoming a nuisance, as some of its congeners so readily do when neglected, and groups which have been established for over ten years without lifting or receiving any attention whatsoever are still doing well.

T. rosea grows about two feet tall; the narrow foliage is sparse and pale green. The tubular flowers are an unusual and very attractive shade of shrimp pink; they are produced in abundance from June to October. *A. T. J.*

ERYNGIUMS.

The Sea Hollies are umbelliferous plants of real garden value which may be grown in any ordinary garden soil in an open, sunny position. Owing to the metallic-blue of their stems and spiny leaves they are highly decorative subjects and very effective in the border during the later summer.

The genus consists of a very large number of species of hardy or tender herbaceous perennials, several of which are useful border plants. E. Oliverianum is one of the best; it is of good habit and produces large heads of flowers of a lustrous metallic blue. E. amethystinum is a very ornamental plant with beautiful Thistle-like heads of flowers of a glistening amethyst-blue. E. alpinum is a handsome plant producing large heads of flowers of a soft lavender-blue on stems of a deeper blue, and is very effective. E. planum, which is one of our oldest garden plants, has much smaller flower heads, but they are borne in rich profusion, and the plant is still worth growing. *A. P. C.*

PHYSOSTEGIA VIRGINIANA.

Physostegia virginiana, or False Dragonhead, is a rather uncommon herbaceous plant which has flowered remarkably well during the last two months. It does not usually exceed four feet in height.

The stems are erect, slender, square and clothed with opposite, sessile leaves, which vary in shape from lanceolate to ovate, with irregularly and sharply serrated margins.

The inflorescence consists of a terminal panicle, either simple or branched, on which the flowers are disposed in whorls of two. They are flesh-coloured or purple, and are produced from July to the end of September.

Physostegia virginiana is synonymous with Dracocephalum virginianum; it may be easily raised from seeds sown in gentle heat in March, or from cuttings of young shoots inserted in a cold frame in April, whilst old clumps may also be divided in autumn. *R. K.*

FLOWERS IN THE KITCHEN GARDEN.

Whilst the fruit and vegetable garden is almost as interesting as the dressed grounds in summer and autumn, when fruit trees and bushes are carrying their bright fruits and the culinary crops providing a variety of interests, this quarter of the garden is not very inviting in winter and early spring, yet it may be made attractive at these dull seasons by the use of a few suitable early flowers.

Where the kitchen garden is of fair extent a number of flowers may be included at appropriate spots without interfering with the legitimate crops, and they will serve a double purpose, one of which is to supply cut blooms. On a border at the foot of a north wall Christmas Roses and Petasites fragrans may be planted to provide outdoor flowers in the dead of winter, when an edging of Erica carnea will also be attractive. Clumps of Iris stylosa in odd corners, where they will not clash with the vegetables, will also furnish outdoor blooms for cutting, and these plants are often in bloom when covered with a mantle of snow. Wallflowers lining the paths, or a few of these fragrant flowers grown in rows where the ground will not be wanted for a very early crop, will give fragrance and beauty quite early in the year, when the Polyanthuses are also sending up their showy trusses. The Wallflowers may be discarded when they have finished flowering and the Polyanthuses transferred to another place where they will not be in the way.

The good-natured and very floriferous Pink Mrs. Sinkins makes a capital edging subject, quite as attractive in winter with its silvery-grey foliage as the more orthodox edging of dwarf Box; indeed, there are plenty of other flowering subjects that may be used as permanent edgings in the kitchen garden. But undoubtedly the best of all plants for the purpose under notice are bulbs, such as Daffodils and Tulips. The illustration in Fig. 111 shows Daffodils blooming at Brocket Hall, Hatfield, in narrow borders under a canopy of Apple trees, where few other things could be attempted. Mr. Pateman also plants colonies of Daffodils, of varieties that are especially valuable for furnishing cut blooms, in various other parts of the kitchen garden and where they are not required to remain, the bulbs are lifted so soon as they have had a reasonable time to ripen, and planted out in grass land. In such large gardens as Brocket and Aldenham some of the borders in the kitchen garden are planted with hardy herbaceous subjects, which can be drawn on in summer to furnish flowers for indoor decoration, and thus save cutting those in the pleasure grounds.

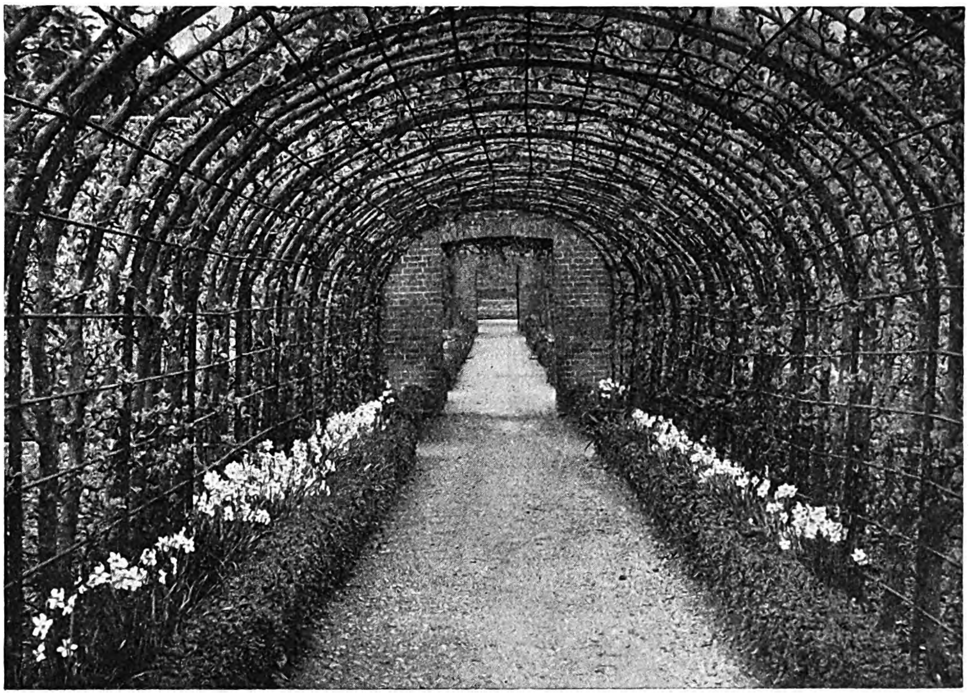


FIG. 111.—DAFFODILS UNDER TRAINED FRUIT TREES AT BROCKET HALL.

HARDY FLOWER BORDER.

KIRENGESHOMA PALMATA.

A bold clump of this Japanese plant some three feet high, and four feet to five feet across, has been a very imposing object in a mixed border throughout the autumn. The flowers are a waxen ivory-yellow, and they greatly resemble half-opened blooms of a single Dahlia. The smooth stems are dark brown and glossy, and these make a striking contrast with the foliage when the latter has assumed its yellow autumnal tints.

K. palmata is a herbaceous perennial and a fine subject for a partially-shaded position where the soil is well drained, yet moist and rich. As it flowers from late August onwards, it is especially useful for autumn effect. It is very effective as a background to a group of Gentiana asclepiadea, the Willow Gentian, the soft yellow of the one and the blue of the other making a most charming and harmonious combination.

K. palmata seldom needs any attention, and established specimens may be left undisturbed for many years. Propagation is easy by division or detaching rooted portions of the plant. *J.*

COMMELINA COELESTIS.

Mr. Arnold remarks, on p. 107, the blue of the flowers of this plant is of peculiar purity and loveliness, and is enhanced by the golden stamens and the bright green foliage. My plants were raised from seeds some years ago and they are planted in a fairly sheltered border. Slugs were troublesome to the plants when they were young, but they do not seem to harm them much now. I do not find, however, as Mr. Arnold does, that this Commelina flowers in June. It does not appear above ground until then; in fact, every year I wonder whether it means to come up at all—and with me it does not flower until August. *W. R. J., North Cornwall.*

FLORISTS' FLOWERS.

BORDER CARNATIONS.

THIS SEASON'S NOVELTIES.

THAT the culture of the border Carnation is steadily increasing is made evident by the number of varieties sent out, and which pass into the general collection every autumn, only to be succeeded by further novelties.

This year, I think, more call for special mention than usual. Bookham Beau, heavily marked scarlet, is a beautiful flower. Esmé Murray, very large, heavily marked soft pink, gained a F.C.C., was first in seedling classes at the National Carnation Show, a premier bloom, and was awarded the Charrington Bronze Medal for the best seedling of the year; Dorothy Murray was noticed in my previous article. These and Brunette (A.M. and F.C.C.), heavily edged and marked maroon crimson, are four white-ground Fancies which will be seen at many shows. They are all of the strongest habit, with good stem and calyx. If only Carnations could be grown without supports I feel sure they would find a place in every garden and raisers are certainly realising this.

Two other very charming flowers among white grounds of the strongest constitution are Kate Dew and Freckles; the former may be regarded as a white-ground Sweet Anne Page and it is strongly clove-scented; Freckles is minutely spotted with lavender and should become a favourite.

Yellow-ground Fancies of lovely colouring are Helen of Troy, heavily marked with crimson, and Lady Godiva, edged and splashed with salmon-pink. Both these are perfect for exhibition or border, having form and constitution, while the deep yellow groundwork shows up well.

Bookham Beauty, lavender-grey, striped carmine on an apricot ground, is very fascinating. To all who like the colouring of Kelso or King's Jester (the latter a novelty of last season and a grand border variety), this Fancy will appeal.

Linkman Improved, which promises all the good points of strength, stem and perfect form, with the unique colouring of the old favourite Linkman, should certainly have no trouble in establishing itself, for no other variety is exactly like it, and it is universally seen at exhibitions, despite its drawbacks.

I do not know whether Florence Grisby is being sent out this autumn, but if it is I advise exhibitors to obtain it, as it is a good variety.

Fancies which have come to stay are Albert E. Amos (A.M.), and Fred W. Ransome (F.C.C.), the former is pale old rose, occasionally ticked with scarlet, with a beautiful sheen; it has a very strong stem and calyx, and is perfect in the open border, giving a wonderful amount of layers. Fred W. Ransome is a glistening, deep purple variety, evenly banded with scarlet; it is of the strongest constitution, and will, I think, be greatly admired. Florice, slate-grey, striped with pink, is specially useful for garden purposes, as it is a charming variety of excellent shape and colouring, and should prove an acquisition to its class.

There are some outstanding Selfs, St. John being of unique colouring and perfect form. The lovely dead rose shade, unlike that of any other variety, allied to strong habit, will make for popularity. Teviotdale, a strong, ruby-rose, another rare shade, is equally good for any purpose.

Mrs. Paul Vlasto (A.M. and premier, 1926) was, as then shown, a beautiful white Self of exquisite form and great substance. The habit makes it a desirable border plant, and for exhibition it should be perfect.

E. Lyall Swete is remarkable for the size of its scarlet bloom, and strength of stem. It should prove welcome, if only to add to the small number of really good Selfs of this colour. Receiving an A.M. this year at Chelsea, it will prove useful to exhibitors, either from under glass or in the open border. A really perfect purple is promised us in Louie Smith, its strong stem, good calyx and general habit making it ideal for exhibition. A great future is predicted for this variety, and good novelties of this colour are wanted. Another Self which, if it justifies its reputation, would be doubly welcome, is Bookham Apricot; this is strong and good in the open border. Nearly all flowers of this shade are apt to disappoint after the first season, but I hope this variety may be the exception that proves the rule.

Although so much rain has fallen this season, Carnations have bloomed well and given perfect flowers in the open border. I am coming to the conclusion that provided drainage is adequate and particularly on light soil, they really succeed best when watering is done on a more liberal scale than is generally considered necessary with these sun-loving subjects. Not being thirsty by nature, they do not show the effects of drought to the same degree that many plants do, but, on the other hand, they respond very gratefully to, and, indeed, absolutely require, a good watering and overhead spraying after a hot day, and look their best, and give it, when planted in an airy, sunny position, but not one on which the sun scorches with no relief. This, of course, is one of the problems of outdoor cultivation. We cannot tell what weather to expect, and that is why planting in beds in different aspects is advisable, if possible, as the grower then has blooms during a longer period, and also for early or late exhibitions.

Weather conditions in northern districts have been appalling, and on heavy soil, and possibly faulty drainage, losses and "bursting" have been frequent and unavoidable. Pot culture under these circumstances, is being resorted to by many amateurs who have hitherto only grown Carnations in the open border. Drainage is still the first consideration, and I advise beginners to "crock" their pots liberally with varying-sized sherds, on this account. Experienced growers can and do very often place only one large crock in each pot, but they have learnt the exact needs of each variety as regards watering, and thus run no risk from sodden rot conditions—a very frequent cause of failure.

The principal varieties sent out last autumn, such as Mrs. F. W. Seymour, Mrs. J. Fairlie, Lady Bower, Julia B. Wells and Ebor, to mention only a few, have proved perfect open-border plants, the two first-named being somewhat like Mrs. Hawksbee in habit of growth. Julia B. Wells gives plenty of strong layers and is the only Fancy at present of its colour combination. Anyone desiring a good heliotrope Self for border use should try Bindle; for this purpose I do not know a better variety of its shade. *J. B. Wells.*

TREES AND SHRUBS.

DABOECIA POLIFOLIA.

MANY Ericaceous plants have a reputation for their long season of flowering, but in this respect probably none can equal the Irish or St. Dabeoc's Heath, for its season extends from early summer until well into November. During all this time this dwarf shrub makes a bright and charming display, and it is thus very valuable for planting in quantity in the foreground of shrubberies or in informal groups on sloping banks on the border of woodlands.

The plant thrives in a shady peat soil and is readily increased by cuttings placed under a handlight, and also by layering. The habit of the plant is somewhat straggling if left untouched, and to counteract this it is good practice to cut off all the previous year's growth just before new growth is about to begin in the spring. Under this treatment groups remain effective for a number of years.

The type has flowers of a deep rose colour, but there are several varieties of merit, including alba, pure white; bicolor, white and purple; and atropurpurea, with dark, reddish-purple flowers. *A. P. C.*

CAESALPINIA GILLIESII.

THIS Leguminous shrub received an Award of Merit when exhibited before the Floral Committee of the Royal Horticultural Society on June 8. The plant submitted was in the form of a small bush in a large pot, rather a poor specimen of this interesting shrub.

During a recent visit to Norfolk, I saw a very fine specimen of this Caesalpinia growing in the gardens of Mrs. Watson Kennedy, of Wiveton Hall, Cley-next-Sea. The plant was trained against a wall facing south, and it has occupied that position for about fifteen years; it covers a considerable area of the wall, being about ten feet high and quite as much wide. When seen during early August, it was most attractive with the finely divided leaves and yellow flowers, from which protrude, for a few inches, bright red anthers.

This plant, although looked upon as a tender subject, withstood the severe winter of 1917, when many less tender plants were badly damaged or killed outright in other parts of the garden. There are many sheltered gardens where this plant would succeed, as north Norfolk cannot be regarded as a very mild district. *R. Findlay, Wisley.*

LONICERA NITIDA.

MR. JOHN BUTLER, of Rose Cottage, Kidlington, sent fruiting sprays of this evergreen Honeysuckle, and wrote: "I thought the enclosed would be interesting. I have never seen it fruit before. The walls of my house are covered with it, south, west and north, and it is growing very freely on all aspects."

Each succeeding year the undoubted merit and beauty of this beautiful Chinese plant becomes more apparent. To-day very many hardy shrub specialists would include it among the dozen most useful Chinese shrubs introduced to our gardens during the present century.

A close-growing evergreen bush, with small, ovate, dark green leaves, one quarter to half-an-inch long, it is very neat and attractive either as a specimen lawn bush, or in the shrubbery border. The small, creamy-white flowers possess a little fragrance, but far more interesting and attractive are the small, globular, shining, opal-blue fruits; hanging thickly on the undersides of the branches, glistening in the late summer and autumn sunshine they are particularly pleasing. The fruits are not seen to the best advantage on bushes until the latter are five feet or six feet in height, but cultivated as Mr. Butler grows them, on walls and fences, the beauty of the fruits is much more apparent.

It is, however, as a shrub for hedges that Lonicera nitida seems destined to find its greatest use and value in our gardens. Smaller in leaf and neater in habit than the popular oval-leaved Privet (Ligustrum ovalifolium), it forms a pleasing change and relief from this much-planted shrub. It is very readily propagated by cuttings under glass and in the open border; it is fast in growth and seems to withstand close cutting with shears as well and as often as Privet. In the height to which it will grow as a hedge-row shrub, and the ease with which it can be cultivated in most soils, Lonicera nitida seems to be on a par with Privet. L. nitida is a native of western Szechuan and Yunnan, and was discovered by Mr. E. H. Wilson in 1908, growing at altitudes ranging from 4,500 feet to 7,000 feet. *A. O.*

THE TREATMENT OF DRY BANKS.

STEEP and comparatively dry banks often exist within the precincts of gardens situated in hilly districts, and such places may be made very attractive, adding greatly to the amenities of the garden. Should the ground slope very steeply, a series of terraces may be made, and these should conform to the surroundings. For instance, if the environment is informal, the paths should also be informal and partake rather of the nature of rude tracks sufficiently wide to allow of comfortable passage. The paths may be formed of stones of irregular shape and size, and the interstices between the stones planted with suitable, low-growing, crevice plants. If retaining walls are necessary they should be of sufficient strength to withstand the pressure of the bank, the weight of which will be considerable; such walls should be constructed of rough-hewn stone, and will be ideal for the reception of many alpine and other plants.

A very different method of treating a steep bank is to arrange irregular stone steps or paths with occasional stepping stones through it; such treatment is very natural, and is best suited to ground of gentle slope, whereas the dry wall and terrace method lends strength to ground that falls sharply and renders the subsequent management of the bank more comfortable and efficient. For a bank of large dimensions mass planting is best, the resultant effect being always more pleasurable and much more effective than when heterogeneous mixtures of a great number of subjects, many, perhaps, quite unsuited to such a position, are used. In the planting of the treated area the first consideration is the exposure. If it faces other than north or east, a wide choice of shrubs and plants is available, but only such as require a small amount of moisture should be chosen.

The finest shrub for a dry bank is the Broom. Many of the Brooms are suitable, including Cytissus Andreanus, C. pallidus, C. Dallimorei, C. Dorothy Walpole, C. fulgens and such pretty varieties as Butterfly, Dragonfly, Firefly, Daisy Hill and Mayfly. In firm soil and a much exposed, windy situation, the ordinary C. scoparius is a capital plant, while on the lower terraces may be introduced such dwarf Brooms as C. schipkaensis, C. Andreanus prostratus, C. kewensis, C. Beanii, and the small C. Ardoinii. A fitting and very lovely companion to the Broom is Genista virgata, a fine subject for a dry position.

Corokea virgata is a good bank plant, as are many of the Cotoneasters, and I have found many species of Ceanothus admirable for the purpose. Cistus should be largely planted; a good selection of rock Roses includes the beautiful C. purpureum, C. salvifolius, C. obtusifolius, C. crispus, C. algarvensis, C. florentinus, and the larger growing C. ladaniferus and C. laurifolius. In the retaining walls a representative collection of Helianthemums will find a congenial home.

Bearded Irises are very beautiful when boldly massed on sharply-sloping banks, and do not, apparently, object to the dry conditions. I have cognisance of a very steep and dry bank facing west where for the last two seasons a very large "drift" of Irises in good variety has been a very fine feature.

Buddleia nanhoensis is a fine subject for a dry position, as also is Senecio Grayi, a most effective plant; certain of the Olearias will thrive in such surroundings, and Ericas, especially the ubiquitous E. carnea, should be extensively planted.

For the dry walls and the interstices of the paths, a whole host of small plants are adaptable, and good breadths of Aubrietia in choice variety and of Nepeta Mussinii should be introduced in close proximity to the stone areas.

The plants available for a north or east exposure are somewhat limited. A massed effect created by a very few subjects is the best solution of the problem; a pretty planting I recently saw on a north bank was a mixture of Primula denticulata and yellow and white Polyanthuses in spring, interspersed with Foxgloves and Aquilegias for a later display. The one disadvantage to this selection is the necessity, after the first season, of continually checking the progress of the Foxgloves, otherwise they will rapidly crowd out the Primulas.

If it is desired to treat wooded slopes or banks, it will be wise to retain a few suitably placed trees; an occasional Pine, for instance, is a great asset. For small banks of gentle contour I would suggest drifts of dwarf Brooms, of Ericas or similar plants; bold massings are delightfully effective.

In sheltered localities the terrace walls will provide suitable positions for many choice shrubs, and may be made a feature of absorbing interest; the selection of plants, however, must be largely a matter of individual taste, so that I do not make a lengthy selection, but merely reiterate the advice to plant a large area boldly to procure an appreciable effect.

Autumn is the ideal season to undertake the work of beautifying these dry banks; thorough preparation of the ground will be reflected in the growth made by the shrubs and plants during the next season or so. *R. E. A.*

PLANTS NEW OR NOTEWORTHY.

DIGITALIS DUBIA.

In April, 1926, when plant collecting in Majorca, I stayed, among other places, at the stately mountain monastery of Lluch, and there had the good fortune to come upon Digitalis dubia. I did not realise my good fortune at the time, for the plant was not then in flower. All I could be sure of was that it was a Foxglove, that it was a perennial, and that it was dwarf. The last year's flower spikes were still standing, and were only twelve inches to eighteen inches in height. The seeds, unfortunately, no longer remained. Its perennial habit was vouched for by the clusters of rosettes surrounding the last year's flower spikes, and by the thick, almost woody, stocks of the plants.

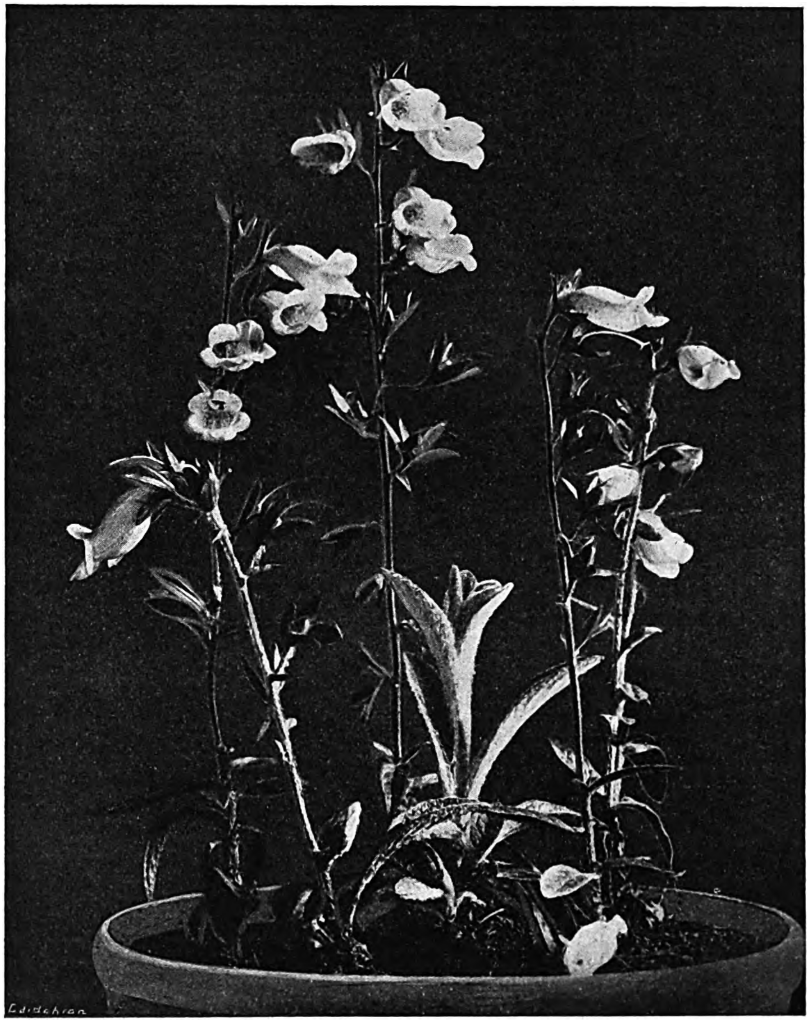


FIG. 112.—DIGITALIS DUBIA.

My experience of dwarf perennial Foxgloves until then had not extended beyond such comparatively dull things as Digitalis lutea and D. ambigua, and I remained therefore perfectly calm, on finding this Marjorcan species. I took half-a-dozen plants, however, by way of mild speculation, and succeeded not only in establishing them, but in flowering them that same summer. When they flowered I no longer remained calm. Digitalis dubia (Fig. 112) proved to be one of the most delightful little plants imaginable. It is a dainty, fairy-like miniature of our own native Foxglove, with big wide bells of a charming delicate pink, shading to pure white inside, and richly spotted within with rich crimson. The plant is without doubt the ideal Foxglove for the rock garden, and it has an enormous advantage over the common Foxglove of being a true perennial. The next thing was to test its hardiness. Of this I had little doubt, for Lluch lies high in the mountains and can, on occasion, be terribly cold. Out my precious plants went into various soils and aspects on the rock garden at Stevenage, and to my delight they proved as hardy as I had expected. They came through last winter in the open without protection of any sort, and flowered again freely this year.

I made a second expedition to Majorca this spring, and then made it my business to collect Digitalis dubia wherever I found it. It was, however, never very common, and when found not always possible to collect. It grows usually in rocky gorges, sometimes in coarse scree, but quite as often one finds it growing in quite impossible rock crevices from which it is hopeless to try to extract it.

The leaves of this beautiful little plant are narrower than those of Digitalis purpurea, the common Foxglove, and are rather thickly felted with white wool. It is to be hoped that it will seed in this country and thus enable one to increase the stock so that it may find its way into the gardens of those lovers of alpines who like a good plant. It may, I find, be increased by removing side growths, but this is a comparatively slow business, and once this plant becomes known, rapid increase by seeds will be the only way of coping with its popularity.

Digitalis dubia has not yet found favour in the eyes of the Floral Committee of the R.H.S. Possibly emphatic assurance as to its hardiness is required, for this daintily beautiful plant is almost too good to be true—a delicate pink Foxglove, dwarf and perennial. That last, viz., "perennial," is what gives it such a special value, while as to hardiness, it has had a definite test here and has come through it without injury. *Clarence Elliott, Stevenage.*

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GLADIOLI FOR SUCCESSION.

MANY lists of flowering dates for Gladioli have been published from time to time in America, during the past twelve or fourteen years, and Mr. Forman T. McLean gave the result of his study of these in *The Flower Grower* for May last. He states that his material came from all parts of the United States, Canada and England. This list includes some six hundred varieties which he divides into five periods. In the few volumes of the *Daffodil Year Book* flowering dates of the Daffodil may be found, but I think the only list of flowering dates of Gladioli to be published in England is the "Flowering Table," by Mr. A. E. Amos, in the *Gladiolus Annual* for this year. Planting dates are given, the first as April 5, and the last as May 3, but the specific varieties planted on any given date are not marked. As those planted in May may flower but a few days after those planted in April, the planting date is important in working out the number of days. I wonder if I should be near the mark if I assumed that Mr. Amos planted Ali on April 5, and Odin on May 3?

Now that a start has been made with flowering dates in England, no doubt more particulars will be given in future lists. In calculating the number of days from planting to flowering, it is important to know the starting date, the soil conditions, and the locality. There is another factor which is also important—all corms reported on should be those of first size. This was clearly brought to my mind as I started writing these notes. On my table was a bowl of Dr. van Fleet; each spike had four fully-open flowers and three prominent buds. This variety is a second-early, as the following flowering dates will show:—4/8/23, 4/8/25, 27/6/26, 27/7/26 and 2/8/27, yet by planting corms of varying sizes I was able to cut my last spikes of this variety just a month after my first spike showed bloom.

In some English catalogues I find an attempt to divide Gladioli into three sections: early, mid-season and late. Mr. McLean divides them into five periods of ten days each. These notes were intended to follow the former division, but on further consideration it seemed desirable to list the varieties in chronological order and cover both systems.

I started with Early Sunrise on July 14. It has been claimed for this variety that it was, and is the first, to bloom, but my records for 1916, 1917, 1918 and 1919 show the flowering dates of this and three others as follows:—

	1916	1917	1918	1919
Early Sunrise ...	July 20	July 22	July 21	July 20
Prince of Wales ...	,, 19	,, 22	,, 19	,, 18
Pink Beauty ...	,, 5	,, 8	,, 4	,, 7
Halley	,, 19	,, 18	,, 14	,, 20

Some of the Primulinus varieties, such as Hermione, Vanessa and Vinula, may be had in flower in the south as early as the first week in July.

JULY.

14th, Early Sunrise; 15th, Rev. Ewbank; 16th, Altair, Scarletta and Thoth; 17th, Topaz; 18th, Linton; 19th, Gen. de Wet; 20th, Bobolink; 21st, Elberton; 22nd, Revue; 23rd, Elizabeth Tabor and Helen of Troy; 24th, Pansy and Mrs. George Kellner; 25th, Giant Nymph, Lene Gratz, Carrara, Alice Tiplady; 26th, Sheila, Shell Pink; 27th, Margaret Letwas, Sweet Lavender, Canonite, Nydia; 28th, Fire Queen; 29th, Maiden's Blush and Scarlet King; 30th, Arlon, Ada de Poy, Golden Swallow and Priscilla Alden; 31st, Dr. van Fleet, Joe Coleman, Clio, Roanoke and Salmon Beauty.

AUGUST.

1st, Byron L. Smith, Butterboy and Woodcote; 2nd, Antares, Myra and Titian; 3rd, Scarlano and Pansy; 4th, Catherine Coleman and Orange Queen; 5th, Jacoba van Beieren and Odin; 6th, Ali, Nancy Hanks and Red Fire; 7th, Capt. Boynton, Jack London and Ming Toy; 8th, Capella and Rosemary; 9th, Twilight and Jasper; 10th, Priority, Gold Elsie and Sulphur Frills; 11th, King Pearl; 12th, Anna Eberius, Purple Glory and Romance; 13th, Black Pansy; 14th, Scarlet Princeps and Glow; 15th, Lindenow and Virginia Lou; 17th, H. C. Goehl; 18th, Elvira and White Glory; 19th, Princely and Ethelyn; 20th, Scarlet Wonder; 21st, A. B. Kunderd and Muriel; 22nd, Golden Gate and Atlante; 23rd, Gold; 24th, Mrs. F. C. Peters and My Favourite; 25th, Willis E. Fryer; 26th, Red Cloud, Wm. Booth and Helen Wills; 27th, J. A. Carbone; 28th, Louise; 29th, St. Thomas, Heliosa, Pearl of California and Dr. F. E. Bennett; 30th, Gloriana; 31st, Ed. Springer and John Toland.

SEPTEMBER.

In the first week in this month I had Pippin, Lorraine Woerner, Golden Measure, Rubella, Flaming Vale, Lemon King, Lucette already in flower, and one or two others yet to appear, including Quaker Maid and Queen of Somerset.

The above list is a rather formidable one, but individual tastes will quickly shorten it. Most of the varieties will be found in more than one English catalogue. However, apart from the cheaper varieties, I should not be content unless I had some of the following:—

Rev. Ewbank, a light blue; Giant Nymph, pink; Byron L. Smith, which is now too well-known to need any recommendation; Dr. van Fleet, a tall grower with slender stem, an excellent flower for vases; Golden Swallow, a first-class yellow of unusual form, as its name indicates; Nancy Hanks, a flower rather on the coarse side, perhaps, but a grand variety for a bold effect; six or more flowers of rich apricot to orange-pink, with well-marked grenadine tongue, are open at the same time. Captain Boynton is another large flower of recent introduction, white, suffused lavender, with deeper lavender blotch, and popular wherever shown; Twilight, with its creamy-buff colouring and its yellow and delicate pink throat has always been a great favourite of mine, as also is Sulphur Frills, which I prefer to most of the whites.

Romance is another attractive flower of good habit; Black Pansy is a tall grower with a slender stem and needs staking, but its dark red flowers are very striking. Scarlet Princeps is a very bright flower, but is apt to be too dwarf for most people's liking. H. G. Goehl is a blotched variety at a moderate price. Mrs. F. C. Peters makes a pretty spike just at the end of the month of August, and now that the price has come down to reasonable limits it will certainly be very largely grown. The price of Golden Measure now enables one to buy a dozen for the same money as one had to give for a single bulb a few years back. Flaming Vale produces a fine, tall, strong spike with many deep red flowers open at once.

Turning to the Primulinus group, we have Topaz, a very pleasing flower of salmon colour, but not a tall grower. Revue is comparatively new, tall, with many flowers open; the centre of the flower is a rich yellow flushed with pink on the tips of the petals. Arlon is a richly-coloured flower which always attracts attention. Sheila is classed by some as a large-flowered variety, although of primulinus blood; it is a tall grower with rich salmon flowers; very attractive under artificial light. Priscilla Alden, orange with light yellow blotches, will appeal to most and disappoint no one. Butterboy is a pale yellow variety of straight growth, with neatly-shaped blooms. Pansy is a rich red with darker blotch. Rosemary is not a cheap sort, but it is unlike any other; on a white ground the petals are marked with fine hair-lines and stipplings of lavender-rose, both back and front. Jasper has proved itself a sturdy grower with red flowers having a purple feather over zones of clear yellow. Ming Toy is a large, showy, buff-yellow of good form. Elvira is a nearly white form of good habit. Prim Queen is a fine orange-yellow, producing a good spike. Copperhead is very like the last-named, in fact, as grown side by side no difference could be detected. Rubella is rich velvet-purple, with a small ruby spot on the lower petals, an attractive flower in this colour.

Having made out my order for the above and money still being available, I should be tempted to include some of the following:—Panther, a distinct acquisition to the fancy class; Lady Ada Fitzwilliam, a free-flowering Langprim variety; Pearl of California, a beautiful, full spike of pink; John Toland, peach-red, shading lighter to the centre and with a prominent ox-blood blotch on the lower petals; Gold Eagle, a very fine yellow and tall grower; Heliosa, another good yellow but dwarfer than the preceding variety; Jap, also a fine clear yellow; Phaenomen, a flower of very delicate and refined colouring, and Splendorra, a tall, purple variety.

I could go on almost indefinitely. Many other varieties might be mentioned, but I think the lists are long enough for the readers of *The Gardeners' Chronicle*. I have also in mind that a trial of this particular flower has been made at Wisley this year, and I have no doubt the report of this will be in the hands of readers before next planting season. In that report mention will, no doubt, be made of other varieties and, following the usual custom, we shall have full information both as to planting and flowering dates. *Sussex.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

MR. ARNOTT's note on Allium sphaerocephalum (page 186) ought to remind one of an interesting genus of Monocotyledons which deserves more attention from amateurs than it usually receives. It is true that, among the eighty species enumerated in the *Kew Hand List* the majority are of no more than botanical interest; but there are others which always receive favourable notice from visitors. A. sphaerocephalum, flowering in July and August is one of these, and is followed by A. paniculatum, which carries handsome, conical trusses of pendulous crimson flowers on stiff stems two feet tall. Next in succession comes A. Beesianum, forming dense clumps which are crowded in September with corymbs of good blue flowers, the twelve-inch stems being bent at the top so that each head droops gracefully. A. Bulleyanum is hardly worthy of bearing the name of one who has done so much for horticulture, nevertheless, its flowers, each with a bright green ovary within a claret-coloured perianth, borne on long, slender pedicels in a spherical head, offer a modest display on a sunny morning, and provide irresistible attraction for wasps. In late spring A. subhirsutum justifies admission to a mixed border by a profusion of corymbs of white blossom.

In the genus Inula there is no species, methinks, equal to the Himalayan I. Royleana for vigorous beauty, yet the only praise which I can remember seeing bestowed upon it is in Mr. Robinson's *Flora and Sylva*, Vol. I, page 310, where there is a fine coloured plate from a drawing of the flower by the late Mr. Moon. July must be half-sped before this plant rears its rich orange discs, four or five inches across, on sturdy stems about two feet high without the slightest tendency to flop. Its colour contrasts well with that of Anchusa italica var. Dropmore. I am indebted to the late Mr. Irwin Lynch, who presided so effectively over the Cambridge Botanic Garden for many years, for another attractive Composite, to wit, Helianthus mollis, which opens its golden blossoms in latest summer and has none of the coarseness which mars the effect of some of its kin. It grows some five feet high and has pleasing, velvety foliage.

There are several desirable shrubs which, although quite hardy on the western seaboard, require more continuous and hotter sunshine than they find here to enable them to do themselves justice. Among those which we have reluctantly decided are not worth growing are Clerodendron trichotomum and C. foetidum. Neither of these flower here in September, and it is only about one year in five that they make the fine display which one admires on the south coast. In the same category must be reckoned Xanthoceras sorbifolia, which flowers, indeed, and sometimes ripens its huge capsules; but the panicles are stunted and poor compared with those produced in the southern counties. No doubt it might make a fine show against a wall, but it is not in every garden that wall space can be found for it.

The Spanish Broom—Spartium junceum—is another disappointing shrub in our humid west. It flowers, indeed, for two or three years, but its life is short; whereas the Madeira Broom—Genista virgata, and the Etna Broom G. aetnensis—both natives of sunny climes, thrive vigorously, never fail to flower profusely, and attain a great age. It may save Scottish gardeners some disappointment if the climatic peculiarities of these species are borne in mind. *Herbert Maxwell, Monreith.*

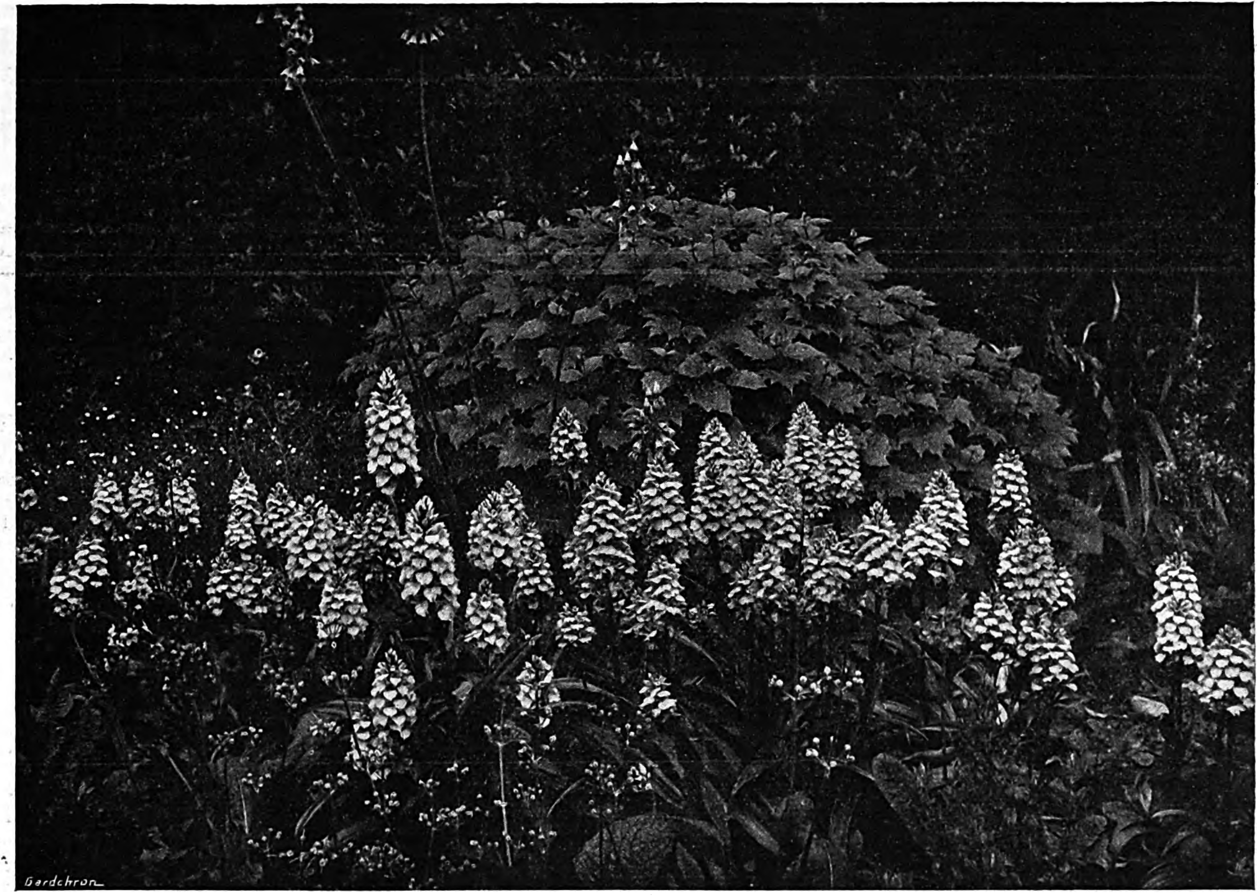

FIG. 113.—ORCHIS FOLIOSA AT KEW.
(see p. 244.)

NOTES FROM KEW.

It is interesting to record some of the many trees and shrubs which have made abundant growth and leafage during July and August, despite a poor start in April and May. Frosts first crippled or destroyed many young growths and flower buds; following this, we experienced six weeks of dry weather, when choice shrubs in particular, made comparatively little new growth. We have now had some three months of abnormally wet and dull weather for the time of year; nevertheless, there should be abundant blossom on trees and shrubs next year if sufficient sun and dry weather are experienced to ripen the growths before sharp frosts occur to cripple sappy, unripened twigs.

In shrubbery beds and borders the Chinese Angelica Tree, Aralia chinensis, is strikingly effective, with large, double-pinnate leaves up to three feet or more in length, and huge panicles, thickly studded with small, white blossoms. Though sometimes represented by a small, spreading tree, it is more often seen as a large bush, with many sucker growths, clothed with large spines; these come up freely around established specimens, often at some distance from the parent, and provide a ready means of increase.

Few shrubs have a longer and more useful flowering season than Hydrangea paniculata. For about two months, during August, September and into October, the large, pyramidal panicles of white blossoms are conspicuously attractive at the ends of vigorous, leafy, young growths—the result of hard pruning in April, thinning the young shoots about six weeks or two months later, and applying a liberal mulch of decayed manure early in June.

The shrubby Mallows, varieties of Hibiscus syriacus, have flowered surprisingly freely and continuously this autumn. We usually associate their greatest beauty with a warm, sunny August and September, which is certainly not the case this year. We must probably look to the dry, sunny days of May and early June, which ripened and commenced the formation of the flower buds in the side growths, for the freedom of flowering this autumn. Both single and double sorts are attractive. Four single varieties stand out as particularly showy: Hamabo, blush-white, with a showy crimson base; Coeleste, light purplish-blue; Rubis, ruby-red, and Totus albus, pure white.

The Sorrel Tree, Oxydendrum arboreum of botanic gardens, and Andromeda arborea of some nurseries, is a very distinct small tree. It belongs to the Natural Order Ericaceae, and is deciduous, with fan-like sprays of white Erica-like blossoms borne at the ends of the shoots in August and September. A little later the tree is also an object of beauty, the leaves changing to rich red and golden-yellow before falling. Clethra tomentosa is another Ericaceous plant, flowering in early autumn. A bush up to five feet or more in height, it thrives in association with Rhododendrons. The white flowers are more showy than those of the Common Sweet Pepper-bush, C. alnifolia, and it is also valuable because it flowers a month later.

It is rather early to draw attention to autumn tints, for although the beautiful vines, Vitis inconstans (syn. Ampelopsis Veitchii) and V. Coignetiae are already conspicuously bright on buildings and trees, most trees and shrubs are still a rich green. A striking exception is the American Tupelo, Nyssa sylvatica, always among the first to assume a glorious autumnal colouring of shining red and yellow.

Among autumn-flowering Heaths, none surpass the Cornish Heath, Erica vagans, and its several varieties, for extensive planting and massing on sunny slopes and undulating ground. Normally one foot to eighteen inches high, there are masses in several places at Kew which have grown double this height, and at the present time are covered with spikes of blossoms. In addition to the pinkish-purple flowers of the type, the larger-flowered variety grandiflora; the variety alba, with white flowers; the rosy-red variety rubra; and, best of all, var. kevernense—the St. Keverne Heath—are all deserving of attention in the formal garden and pleasure grounds where Heather and Ling thrive.

Flowers are to be found for six months out of twelve on the St. Dabeoc's Heath, Daboecia polifolia, and its several varieties. For most of this period the plants are freely clothed with the richly-coloured blossoms on spreading, bushy plants eighteen inches to thirty inches high. The variety atropurpurea, with rich, purple-red flowers and dark red, tinted foliage, is particularly effective against the rich green foliage and white blossoms of the variety alba. The variety bicolor, with purple and white flowers, is distinct and pretty when dotted among the rosy-purple flowers of the type.

By the lake-side, on the slightly sloping bank, large beds of the Torch Lily, Kniphofia Uvaria, are most effective both reflected in the water when seen from across the lake, and in the distance, down the Sion vista. Another very attractive feature just now at the north end of the lake is a large area of single China Asters, Callistephus hortensis. The seeds were sown on ground which was dug over in spring, after stripping it of turf to use for the repair of lawns in various parts of the gardens. *A. O.*

NOTES FROM WISLEY.

A COMPREHENSIVE collection of Fuchsias is now to be seen at Wisley in one of the greenhouses near the Laboratory, and varieties making a good show include Mrs. Rundle, Mauve Beauty and Phenomenal, with huge blooms of scarlet and rich purple. A more dainty subject is Fuchsia gracilis, of which a pretty, variegated form is in flower, while something of a curiosity, though by no means unattractive, is F. procumbens. The latter is a trailing plant with slender, much-branched stems, which bear axillary flowers having a short, orange corolla-tube and reflexing, greenish-purple lobes. It is a useful subject for planting in baskets and produces bright berries.

Ornamental foliage is provided by Fuchsias, such as A. A. Henkel, in which the underside of the leaves is bright crimson; and also by Sunray and Golden Treasure, with golden foliage sometimes tinged with pink.

In addition to Fuchsias, plants in flower under glass include Nerines, of which the brilliant red Fothergillii major and Prince of Orange are among the first to bloom. In the same house is to be found in bloom plants of the yellow-flowered, Portuguese Sundew, Drosophyllum lusitanicum. Its long, linear leaves are provided with sticky hairs which trap small flies, but, unlike our British Drosera, the hairs are rigid and have not the power of closing upon their victims. Another remarkable feature of this plant is that the leaves are revolute in bud and not involute.

In the large vinery there is an exceptionally heavy crop of Grapes this year. It contains forty distinct varieties which are nearly all grown on the single-stem system and are from fourteen to sixteen years old. Muscats, such as Cannon Hall and Muscat of Alexandria have been remarkably good. Several bunches weighing 5 lbs. to 6 lbs. have been taken from Syrian, while Golden Champion, with its extremely large, oval berries has been nearly as fruitful. Among the black-berried varieties particularly good yields have been obtained from Madresfield Court, Appley Towers and Barbarossa. A curiosity is Carnichon Blanc with pointed berries; while another peculiar variety is the Strawberry Grape, of which cuttings were sent to Wisley by the Rt. Hon. Lord Lambourne. It is not easy to grow well, and the fruits are small, but they have a flavour resembling that of the wild Strawberry, and when ripe are extremely sweet.

In the alpine house, Ceratostigma plantagineum, which looks rather like a miniature Funkia, and Selliera radicans, a little plant with white or pale lilac flowers, which grows on rocks and salt marshes in New Zealand, are in bloom. Grevillea alpina is in flower; this comes from South Australia, and has red flowers similar to those of the much larger Grevillea thyrsoides. In addition to the foregoing, Eomecon chionantha, a white-flowered Chinese Poppy, is interesting, as also is Sempervivella alba, which grows on the mountains around Simla. It bears a strong superficial resemblance to a Sempervivum, and has pure white flowers with a greenish centre, and flat, fleshy leaves which often turn bright red.

The rock garden is rather dull at the present time, save for a bright splash made by the red flowers of Schizostylis coccinea below a shrub of Euonymus latifolius; their blooms very nearly match the colour of the pendulous fruits of this Spindle Tree. Of frequent occurrence in the rock garden are self-sown seedlings of Gentiana asclepiadea, with its white variety alba. Considerable variation in colour is noticeable in the case of the blue forms, which vary from purplish and pale blue to true Gentian blue. This plant is seen in still larger numbers in the wild garden. A few may also be found in the Heath Garden where, in company with Harebells, they mingle pleasantly with the Heather.

Numerous varieties of Heaths are now in full bloom, and in addition to the common Heather, of which there are some very large individual plants, patches of the rich, pink-flowered Calluna vulgaris Alportii are conspicuous. One of the best of the white Heathers is Calluna vulgaris var. Serlei, with long spikes of flower and bright green foliage. Another white-flowered form, C. vulgaris pilosa, carries a slight down on its leaves, which gives it a grey appearance that is all the more apparent when it is contrasted with Calluna Serlei.

Erica ciliaris and E. vagans are in bloom and, as usual, flowers are to be seen on that wonderfully persistent bloomer, Daboecia polifolia.

Among the larger shrubs, Magnolia grandiflora, with its huge, scented, creamy blossoms and Laurel-like foliage, is now in flower, and elegant panicles of white blooms are displayed by Escallonia montevidensis. Strongly-scented blossom is a feature of Clerodendron trichotomum, and also of Clerodendron foetidum, with rose-coloured flowers, the scent of which, however, is not nearly so unpleasant as the specific name would lead one to believe.

In the Field Garden, Potentilla fruticosa and Hypericum galioides, both with yellow flowers, are in bloom. The latter forms a low, round bush, and is well worth growing on account of its handsome foliage. One of the happiest combinations in the Field Garden is that of Buddleia variabilis, with its mauve flowers backed by the dark purple foliage of Prunus purpurea Woodii, while other attractive objects in this part of the gardens include a tree of John Downie Crab loaded with fruits, and numbers of handsome, coral-berried Berberis, such as B. sibirica and B. Regeliana.

Remarkable growth has been made by many of the shrubs planted against the wall of the Laboratory, one of the most conspicuous in this respect being Acacia dealbata. It passed safely through last winter and its feathery, glaucous foliage is now carried to a height of nearly twelve feet. In close proximity is a plant of Billardiera longiflora, a slender climber of doubtful hardiness, which is now covered with bright violet berries and is most decorative; the little, greenish-white, tubular blossoms which appear in early summer resemble those of a Lapageria. Another ornamental wall plant is Abutilon megapotamicum (syn. vexillarium), with its brightly variegated foliage. The pendulous blossoms have an inflated calyx of bright crimson from which the primrose petals protrude. It grows near the banks of the Rio Grande. Some attractive Clematis are in flower both on the walls of the Laboratory and the Garden-keeper's house. Among them are Clematis glauca and C. alabioides, with yellow flowers, and the blue-flowered C. integrifolia. Another handsome climber in flower on the Laboratory is Passiflora coerulea var. Constance Elliott, with cream-coloured blossoms.

The effect of the flowers in the herbaceous and mixed borders has been somewhat spoiled by the rain. Even so, many bright patches are still to be seen, as, for instance, a corner confined entirely to red-flowered plants, which include Salvia Harbinger, S. Grahamii and other red-flowered Salvias, Pentstemon isophyllus, Lychnis chalcedonica, Hedysarum coronarium (French Honeysuckle), Monarda didyma and Scarlet Lobelias. *J. E. Grant White.*

RARE GARDEN WORMS.

III.—THE MOTTLED WORM.

As this species (Allolobophora icterica) has hitherto been found only twice in this country it certainly merits a place among our rarest forms. It was first described by Savigny in 1826. It was then practically lost to sight for sixty years, when it was rediscovered in Northern Italy and Switzerland, and brought into prominence by Dr. Rosa, then of Turin. Dr. Ribaucourt, ten years later (1896) reported it as occurring near Paris, and after the lapse of a further decade, I discovered it in the Botanic Garden at Cambridge. After four more years it was found in Chelsea,* and since that time it has never again been seen. There was an element of doubt respecting the identity of these various finds on account of some differences of structure, but this was set right in 1896 by de Ribaucourt, and we may for the present regard the species as a European one, its occurrence in this country being, in all probability, accidental. Strangely enough, it seems never yet to have occurred at Kew, where so many introduced species have been found, but if careful collections were made here and in other gardens which have received plants from the Continent it ought to be rediscovered. In order to aid collectors in recognising it, the following notes may be of service.

The Mottled Worm is so named on account of its characteristic colour. This has never been carefully recorded. Ribaucourt, who found it fairly well distributed in Switzerland, merely says: *La couleur est grisâtre*; while Dr. Michaelsen, who, apparently, had not seen it alive, states it is "*schwach gelblich*." Beddard does not mention the colour at all. Years ago I made coloured drawings, black and white sketches, and full notes on the living subjects, both in relation to the Cambridge forms and those found at Chelsea. The anterior segments which form the head are flesh-coloured (Fig. 114). A bright yellow patch is often found dorsally midway between the head and the girdle above the male pores. The girdle is usually yellowish, followed by a purple patch, the rest of the worm being a curious mixture of purple and gold. Sometimes these two colours alternate so regularly that they have a decided chequer or chess-board appearance (Fig. 115), and even when the marking is not so uniform, it is very characteristic in its mottled appearance. In one respect it recalls the Brandling, for when irritated or placed in alcohol it emits an enormous quantity of yellow fluid, doubtless a device for protecting it against its foes, like the ink of the cuttle-fish or the explosion of a bombadier beetle. As there is no other worm with which it could be confused, unless it is the sluggish Green Worm (Allolobophora chlorotica) the colour scheme is of great interest and value. Rosa alludes to the fluid in the following note on the Italian forms. "Colour pallid, with a yellowish tinge, owing to the coloured liquid within showing through." One other point serves to guide the student if he has to deal with preserved specimens instead of living material, and that is the tendency of the worm to remain almost straight instead of curling up into a ring when placed in alcohol.

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* See *The Gardeners' Chronicle*, Dec. 23, 1905, p. 434, and October 23, 1909.

I have already more than once pointed out how desirable it is that we should possess accurate delineations of each of the species of worms found in our gardens, first in their living state, and then as they appear when allowed to settle down as spirits are poured over them.

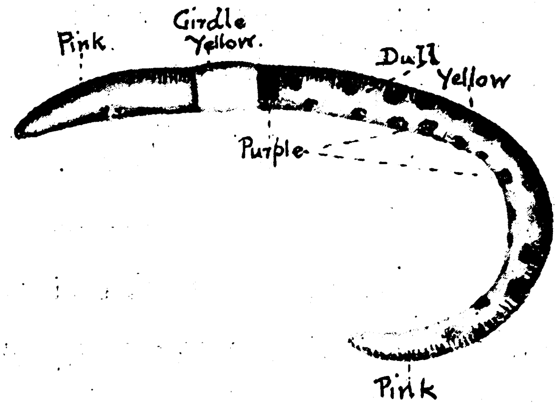

FIG. 114.—ALLOLOBOPHORA ICTERICA.
Colour scheme of an ordinary specimen found at Chelsea.

The muscles differ with the life habits, and something might be learned about the different species by observations such as these.

Collectors may, however, be glad of a description of the Mottled Worm as we may expect to find it in old gardens. Average adult specimens are about three inches (6-8 cm.) in length, and 4-5 mm. in diameter. The number of segments ranges from 140 to 190, those behind the girdle being very narrow. Ribaucourt states that the form of this worm is "*tres gracieuse*," and cylindrical. Attention is also called by him to the tendency of the diameter to diminish in the neighbourhood of the male pores where the papillae, though recognisable, are not conspicuous. There is considerable difference in the descriptions of the girdle. Savigny, who wrote the original description, states that it extends over segments 35 to 44. Dugès examined Savigny's material and found variations, some specimens showing the girdle from 33 to 44. Rosa gives fuller details, and he finds the girdle on 33 or 34 to 42, 43, or 44. Such variations are constantly met with among the Allolobophoras, which have not, like Lumbricus, attained stability. There is a similar uncertainty respecting the segments on which the tubercula pubertatis are found. Savigny, Dugès and Ribaucourt name 36 to 44, Rosa says 35 to 41 or 42; in the Cambridge and Chelsea specimens the girdle segments were 33, 34, to 44, and those of the tubercula 36 to 42, 43 or 44. When we remember how variable the Venetian Worm is (*Gard. Chron.*, July 2, 1927, p. 12) we shall not be surprised at these mutations.

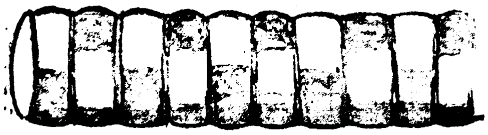

FIG. 115.—ALLOLOBOPHORA ICTERICA.
Section showing chess-board pattern, alternately purple and yellow; enlarged from a Chelsea specimen.

The dorsal pores are not seen, as in the Rosy Worm (Eisenia rosea) on the girdle of the adult; but while the worm is still young and the girdle is in process of formation, they may readily be observed, as both Ribaucourt and I have recorded. The first dorsal pore usually occurs between the sixth and seventh segments, and it is from these that the yellow fluid is secreted. Among the many specimens collected by Ribaucourt in Switzerland, amounting in all to forty, there were many variations, especially in regard to the girdle, but in other respects they were so uniform that no distinct varieties could be founded on these anomalies.

If worms answering to this description, or any others which are in any way unusual or rare are sent to the writer in tin boxes packed lightly with moss they will be carefully examined and reported on if of any interest. In gardens of long standing, and especially in those which have been stocked with plants from abroad, there must yet be many forms which have not had attention; and such species or varieties may be useful for purposes of biology, if duly recorded and described. The address is given below. *Hilderic Friend, Cathay, Solihull.*

REMARKS ON THE CONBITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 234).

MIDLAND COUNTIES.

Hertfordshire.—The fruit crops this year are good, considering the frost we experienced while the trees were in blossom. Early-flowering Apples suffered, the variety Rev. W. Wilks being the worst. Peaches and Apricots dropped all their fruits after setting good crops. Small fruits, such as Raspberries, Black Currants, Red Currants and Gooseberries yielded heavy crops. Our soil is a heavy, cold clay, and in a dry spring trees suffer.—*Richard Staward, Ware Park Gardens, Ware.*

——The Apple crop here is a very good one. The best-cropped dessert varieties are Ribston Pippin, Claygate Pearmain, Worcester Pearmain, Allington Pippin and King Pippin. Other kinds bearing large crops are Lane's Prince Albert, Cox's Pomona, Lord Suffield, Keswick Codlin and Court of Wick. We have very few Cox's Orange Pippin as this variety suffered from April and early May frosts and cutting north and east winds which prevailed. Peaches and Nectarines also suffered from the same cause and but little fruit was left on the trees. We have scarcely any wall fruits beyond Pears and Cherries, and very few Plums, excepting Victorias. Strawberries were half-a-crop and much of the fruits were spoiled by the wet weather when ripening. Bush fruits were good, excepting Black Currants. Gooseberries were plentiful and Raspberries very good. Our soil is loam on clay with some parts gravelly. *Geo. H. Hill, Caldecote Gardens, Bushey Heath, Watford.*

——The fruit crops in this district are variable. Owing to the severe frosts we experienced at the end of April and early May (17° on May 1), the fruit trees in low-lying parts suffered severely, more particularly standard Plums and Damsons; also Strawberries, Peaches and Nectarines. Nearly all kinds of fruit trees flowered abundantly. The trees are healthy generally and clean, making good growth. *Edwin Beckett, Aldenham House Gardens, Elstree.*

——Our soil is heavy loam, and the position is high. Bush fruits, such as Gooseberries, Red Currants, Raspberries and Black Currants were very good; the trees are very clean and free from caterpillars and aphis. I sprayed in winter with Carbo-Crimp winter wash and good results have been noticeable not only on bush fruits, but Peaches and Nectarines inside, also orchard trees of Plums, Apples and Pears. Moss, lichen, scale and American blight have been reduced and the trees are making excellent growth. *W. Stephenson, Hyde Hall Gardens, Sawbridgeworth.*

——The late frost experienced here in May when most of the Apples were in bloom has done little harm to some of the varieties. On the whole, the crops are good, with the exception of Apples Bramley's Seedling, Peasgood's Nonesuch, Mére de Mènage and Rev. W. Wilks. Pears on walls are very good, whilst those grown in bush form near the paths are a complete failure. Peaches are a fair crop, while Plums are a light crop even on walls, those growing on standards having failed to produce a single fruit. The same may be said of Damsons. The only variety of Plums that required thinning was Denniston's Superb. Gooseberries, Cherries. Raspberries and Currants were very good, but Strawberries were much below the average crop. *T. Pateman, Brocket Hall Gardens, Hatfield.*

——Once again, another year opening with good promises of fruit has led to many disappointments. Late frosts and continued low temperature have sadly depleted the Plum, Cherry and Apple crops. Much may have been saved where the use of coverings were adopted. Although Strawberry plants were far from their usual vigour, a moderate crop was saved, and bush fruits yielded heavily. The Raspberry crop was somewhat reduced by the frosts which destroyed the earlier flowers; the variety Lloyd George had a fair crop. Peaches and Nectarines set well but fell freely later. The following varieties appear to have suffered most from the effects of frost. Peaches: Alexandra Noblesse and Hale's Early; Plums: Blue Rock and Denniston's Superb; Apples: Cox's Orange Pippin, Bramley's Seedling (particularly so) and Tower of Glammis; and most varieties of Cherries bore reduced crops. It may be owing to the aspect of the gardens that the crops were at least a week later than in some districts. The soil varies from a sandy nature to a clay, but, as a whole, it may be described as a heavy one. *A. J. Hartless, King's Walden Bury Gardens, Hitchin.*

Leicestershire.—Apple blossoms suffered from the late May frosts, and Strawberries also suffered from the same cause. The Plum crop was also reduced by the cold spring. *A. H. Campin, Whetstone Pastures Gardens.*

——Without a doubt we have to thank the severe frost at the end of April for the light fruit crops this season, there being till then every prospect of a good fruit season. Plums flowered exceptionally well and the fruits set freely, but the frost of April 29-30 destroyed practically every one. In these gardens we registered 12° of frost. It is interesting to note how hardy some varieties have proved to be, Apple Irish Peach is carrying good crops in spite of the frost, also Cox's Orange Pippin; Pear Fertility is also carrying a heavy crop, with the variety

Conference a good second. *M. L. Garrett, Misterton Hall Gardens, Lutterworth.*

——The fruit crops here are well under the average this year owing to the disastrous frosts during the last few days of April; up to that date we had every prospect of a good fruit year. The Apples were caught in blossom, and Pears suffered considerably, although nicely set; trees having the protection of walls are carrying fair crops. Small fruits did not suffer so much, except Strawberries, all the early bloom and some not then open being spoilt. Ours is a heavy soil. *David Thompson, Whatton Gardens, Loughborough.*

——After a very trying spring, with late frosts, we all thought that there was no prospect of a good crop of fruits, but up to the present (July 26), Apples promise to be a good crop on some trees, Pears a fair crop and small fruits good. Plums are a very light crop. A great many Apples are dropping owing to late frosts preventing proper fertilisation. At Easter the prospect was for heavy crops all round. Raspberries were a good crop and Strawberries fair. Our soil varies from medium to heavy clay. *W. Coe, Prestwold Gardens, Loughborough.*

(*To be continued*).

FRUIT GARDEN.

PLUMS ON WALLS.

Not for a number of years have we had such fine crops of good, clean Plums on wall trees with a north-west aspect. The best varieties were Kirke's, the finest Plum for all purposes, and a sort which never fails to crop; Early Rivers', which is equally fruitful; Early Transparent, Belgian Purple, Magnum Bonum, Count Althann's Gage and Late Transparent Gage. Three trees of Coe's Golden Drop are bearing splendid crops, although up to this season they had never given more than a half crop. On walls with a south-east aspect, trees of Kirke's, Early Rivers', Golden Gage and Victoria have produced splendid crops. We have also a good yield of Coe's Violet, Jefferson's, Washington, Magnum Bonum, The Primate and President. The last two are our best late varieties and furnish splendid fruits. On standard trees, the crop was very thin; many of the fruits rotted through the excessive rains, and birds and wasps also did much damage. The small blue tit is the most destructive bird we have to deal with here in the fruit garden. *A. B. Wadds, Englefield, Reading.*

THE MULBERRY.

The Mulberry is of considerable decorative value, a tree rich in romance and tradition. The Black Mulberry, Morus nigra, is the best species, and perhaps the only one worthy of cultivation in Britain. There are some exceedingly fine specimens of the tree in this country, some of great age. Even in winter the bare, greyish-brown, somewhat twisted branches, and the gnarled stem present a picturesque effect, and in summer the dense mantle of large and rich green leaves renders the Mulberry a tree worthy of being planted in prominent positions.

M. nigra is reputed to be a native of Persia, to have been introduced into Europe by the Greeks, and the Romans are said to have betrayed a great partiality for the fruit; it was introduced into England in 1548, and the first trees were planted at Sion House, Brentford. The inconspicuous flowers are greenish white. unisexual and produced in axillary, catkin-like racemes. The fruits ripen from the middle of August to the end of October, and where a tree is suitably placed, as on a lawn, the berries are best allowed to fall and be collected from the turf; they are rarely used for dessert, being too sharp for the majority of palates, but are greatly favoured when used in tarts or puddings, and are suitable for making jam and jelly. A tolerably good wine may be made from the fruits.

The white Mulberry, M. alba, is grown for its leaves, which are used for feeding silk worms. The tree succeeds in any ordinary good, loamy soil, and, except in the far north, may be grown as a standard in exposed situations; in cold districts Mulberries should be afforded the protection of a south or south-west wall. Methods of propagation are many, such as by cuttings, layering, budding on seedling stocks, or inarching; seeds germinate satisfactorily, but seedlings are long in reaching the fruiting stage and often prove sterile.

Wherever old Mulberries exist they should be cherished, as few trees are more picturesque, even though supported by chains and stakes. A magnificent old specimen exists on the lawn of Cirencester Abbey, and near to it is one of the oldest and largest Tulip Trees (Liriodendron Tulipifera) in England—two beautiful and interesting old specimens. *Ralph E. Arnold.*

VEGETABLE GARDEN.

THE SOWING OF PEAS.

I have completed the records of an interesting experiment in the cultivation of Peas, the object being to test the practical value of thin *versus* thick sowing. The soil is admirably adapted to the cultivation of vegetable crops; it was double-dug and enriched with good farmyard manure last winter, at the rate of twenty-four tons per acre. Immediately before sowing the seeds, superphosphate, thirty per cent., was scattered in the seed-drills at the rate of half-an-ounce per lineal yard.

The varieties Little Marvel and Rentpayer were included in the experiment because I was anxious to see the effect of thin and thick sowing on dwarf and tall varieties respectively. Four rows of each variety were grown, and the seeds were spaced as follows: First row, two inches apart and four rows of seeds in the drill; second row, three inches apart and three rows in the drill; third row, four inches apart and two rows in the drill; in the fourth row the seeds were scattered thickly from the seed packet in what I think might be called the old-fashioned way.

The returns from a twelve feet stretch of drill in each instance are as follow:—

Variety.	Seeds 2 inches apart.	Seeds 3 inches apart.	Seeds 4 inches apart.	Seeds sown thickly.
	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Little Marvel ...	6 0	7 9	8 5	5 6
Rentpayer ...	9 1	11 0	13 3	8 1

The result of the experiment makes an eloquent appeal for thin sowing, with its attendant advantages of more light and air and possibly a more regular supply of the elements of nutrition. It should be stated that the greater the distance apart the more vigorous was the haulm, the larger the pod and the better the filling capacity. *Geo. H. Copley, N.D.H.*

THE POTATO CROP.

Potatos planted during March in a rich, sandy loam, yielded a good crop of clean tubers. A portion of the land received a heavy dressing of shoddy in the previous season and the crops were much heavier where this had been applied.

Duke of York, grown from Scotch seed, produced large crops and the tubers were clean and of good shape. The same variety grown from home-saved sets also yielded a large crop, but the tubers were inferior, both in shape and quality. First Crop is a splendid yellow-fleshed kidney variety. The haulm is compact, the tubers a beautiful shape, and the crop comes to maturity very early. This variety is suitable for forcing in pots or frames.

Snowdrop, or Witch Hill, is a white Kidney Potato of flattish shape with very shallow eyes. The tubers are very floury and of excellent flavour when cooked; this variety is very useful for early exhibitions. Carisbrook Castle is a special favourite of mine; the yield from home-saved sets of this variety was excellent. The flavour of this Potato is such that it is preferred to any other early variety.

Amongst second-early varieties, Royalty was very good; the tubers are oval and the flesh white; the haulm is of medium strength. This Potato is a heavy cropper. Ben Lomond is a heavy-cropping, mid-season variety producing large, shapely tubers. In many districts the flavour of this variety is excellent Flourball is a reliable red-skinned Potato, much appreciated for its disease-resisting qualities. Long-Keeper is an oval-shaped Potato with pale yellow flesh; it has proved to be a splendid variety for late use in various localities, and has been grown most satisfactorily alike on heavy, medium and light soils. The new Glasgow Favourite is remarkable for its heavy cropping, robust constitution, and fine cooking qualities. The tubers are of oval shape with shallow eyes; it is an excellent white-fleshed, maincrop variety. *Colin Ruse.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Frost and Insects.—There was a considerable amount of correspondence on this subject—in which I took a minor part—in *The Gardeners' Chronicle* during the months of March and April, 1926. I was rather surprised by the statement of, I believe, Mr. Nicholson, that a large number of insect larvae, having been frozen into a solid block of ice and kept so for a certain time had, on the thawing of the ice, been found to be very much alive. Although I cannot explain away this statement, I would like to draw attention to the results of my own study of and practical experience in the subject during the last winter, 1926-1927, on the Continent. Selecting the wireworm for a subject, I dug up, in open, frozen ground, twenty wireworms frozen stiff and apparently dead. On being placed in the warmth, eight showed sign of life, but the remainder were, beyond all doubt, dead. A few days later, during a thaw, I had occasion to lift a large quantity of turf. In the turf were several patches of the wild Cerastium, a weed which forms a carpet of fine foliage so dense that I have known it to prevent effectually 10° of frost from penetrating to the soil under the patches formed. On lifting the clean turf I, and the men working with me, noted that no wireworms were to be seen, but that on lifting the wild Cerastium (and in every case) two or more wireworms were found, and all alive. This appears to show conclusively that the wireworms seek the protection of rank-growing weeds not only as a food supply but also as a source of warmth during hard weather. Furthermore, we examined the ground under deciduous hedges at the same time and, where the thickest carpet of leaves had lain, found wireworms. I contend that in each of the above instances the wireworms were seeking warmth. If not, what were they seeking? It is a well-known fact that rubbish generates heat, and that this heat gives protection to garden pests during the winter months. Do away with rubbish and weeds in the garden and there will be less protection against frost for the pests. Finally, I would recommend all sceptics to read the fine article on "The Prevention of Insect Attacks in the Garden," by Mr. G. Fox Wilson, which appeared in the *Journal* of the R.H.S., August, 1927. In this article Mr. Wilson clearly points out the folly of neglecting weeds and rubbish which afford shelter to garden pests during the winter. *H. J. Phillips.*

Fruits of Prunus Pissardii.—I read with interest, in your issue of August 27, Mr. J. Kitt's note on Prunus Pissardii fruiting this summer in Wasing Place Gardens, near Reading. I, too, have seen this tree fruiting so recently as last month in a garden in Colchester. There were only one or two fruits on the tree, which is about twelve to fifteen years old, and they were exactly as Mr. Kitt describes them, not quite so dark in colour as the foliage of the tree, and the size of a good Damson. I have previously heard of this tree fruiting, but until this year had never seen it in bearing. *A. Donald Blaxill.*

The Golden Elder.—At present (middle of August) the Golden Elder is in full flower in this part of the country, five to six weeks later than the common Elder. Its Cauliflower-shaped heads are in marked contrast to the flat, somewhat concave inflorescences of the common Elder, and this character alone is, I think, sufficient to distinguish it from the latter species. *A. D. Richardson, Edinburgh.*

Golf Greens.—In the articles which have appeared on this subject, nothing has been said about other than nitrogenous fertilisers. Possibly it is presumed by the writers that those in charge know that no plant will thrive without something besides nitrogen. There may be, at the time of starting, sufficient of other plant foods in the soil to keep the weeds and grass temporarily supplied with them, but the time will come when one or more will be exhausted, and a collapse will follow. Daisies, Plantains and Dandelions will retain sufficient in their crowns for this purpose. The finer grasses are not such gross feeders, and consequently will hold out longer, and for a time will have an improved appearance. But let no one suppose that this happy state of things will continue indefinitely, if only nitrogen is applied. I have on several occasions seen plants rendered useless by excessive applications of nitrate of soda. If it is conceded that the principal good effected by heavy applications of nitrogenous fertilisers is in killing weeds, after this is accomplished there is no further necessity for such heavy applications which will possibly do more harm than good. There is frequently a shortage of one essential element in a particular locality. In this district potash is deficient, and neither Potatos nor Tomatos can be grown successfully unless potash is supplied. I also act on the assumption that there is a shortage of iron in our soil, for there are no large Oak trees in the neighbourhood, and I have noticed an improvement in the colour of Chrysanthemum leaves in twenty-four hours after applying a small dose of sulphate of iron. In another locality I have experienced an almost entire absence of lime, for water from the springs was softer than that collected from the roofs of houses. When the "missing link" is supplied, the effect on growth is marvellous. *Wm. Taylor, Bath.*

SOCIETIES.

YPRES HORTICULTURAL EXHIBITION.

ABOUT ten years ago a British artist sketched an arresting picture in the centre of Ypres. The picture became known under the title of "The City of Fear," and portrayed the shattered ruins of the Cathedral and the renowned Cloth Hall, with a foreground of snow-covered road along which trudged an officer and his orderly, leading their horses. The picture recorded very truthfully the unspeakable desolation and the destruction of this place.

There will be many readers who carry personal memories of Ypres during the Great War, and to them in particular the change which, through God's good grace and the indomitable effort of a clever and industrious people, is now visible over this town and countryside, can appear nothing short of marvellous. The town has been practically rebuilt in a wonderful manner, and there is a spirit of enterprise evident which, in spite of political difficulties, augurs well for the early restoration of the beauty and prosperity of the district.

To some, the idea of material beauty being associated with this part of Flanders may appear incongruous, but those who knew the district as it was before 1914 have memories of much that was indeed beautiful, and many of us can see evidence to-day of the return of that beauty.

A feature of interest to gardeners was the exhibition held on September 4 and 5, under the auspices of the Société Royale d'Horticulture d'Ypres, in a large, up-to-date school, close to the well-known Caserne buildings. It was really the second exhibition on a large scale held in Ypres since the war; the first was in 1924, and this one was described as "International."

The exhibits were mostly of locally-grown produce, but in addition there was a magnificent show of Dahlias, grown at Adinkerke, on the Belgian Coast, which gained the cup offered by the Belgian National Dahlia Society. Other collections of Dahlias came from France, Furnes and Poperinghe; there were also a good group of Ferns from Ghent, and a collection of cut hardy flowers staged by local British gardeners.

But the locally-grown exhibits were of special interest, and there were classes for decorative plants, flowers, fruit, vegetables, etc. There was room for improvement of course, as at most shows, but a really creditable display was made. There was one large collection of decorative plants in great variety, grown on the corner of the Menin road, and this earned a special prize, given by Her Majesty the Queen of the Belgians, for the best exhibit staged by a war-disabled man. Another extensive, mixed collection, including an example of carpet bedding, was cultivated near the spot known to many of us as "Salvation Corner," a spot beyond the Yser canal where our men began to light their pipes when marching back from the trenches. There were Roses, fruit trees and Conifers, all grown at "Railway Dugouts," near Zillebeke; collections of vegetables from Hooge, Roulers, Commines, and all around the town, also one staged by some English residents in the locality, marked "Not for Competition," and considering it was produced at very short notice (Fig. 116), without special preparation, this must be recorded as a noteworthy effort. I think it was marked, as stated, not because it was thought it would never obtain a prize or because the exhibitors were too shy to carry off the first but in deference to the varied national tastes in vegetables. Most of the Belgian growers eye our Marrows and Parsnips with about as much interest as we do their soup herbs and etceteras. Anyway, several British seedsmen got a free unexpected advertisement as a result.

There was a splendid collection of sixty-two varieties of Apples and Pears grown at Vlamertinghe, near where the colossal army dump remained for years, and a less extensive but surely remarkable exhibit of twenty-eight varieties grown at Zonnebeke, on the Passchendaele ridge.

From all of this it will be evident that a great change has come over the country during the past few years and one to be profoundly thankful for. The judges included the veteran M. Louis Van Houtte of Ghent, and M. R. Peemans, the talented Horticultural Instructor for Western Flanders; there were also French and British representatives.

It was altogether a very amicable gathering, and I leave it to those who knew Ypres of old as "The City of Fear" to imagine our feelings as we stood bareheaded at the opening of the exhibition, within a stone's throw of the tragic Cloth Hall, while our national anthems were played by the town band. Truly "Peace hath her victories, no less renowned than war." *A. B. M.*

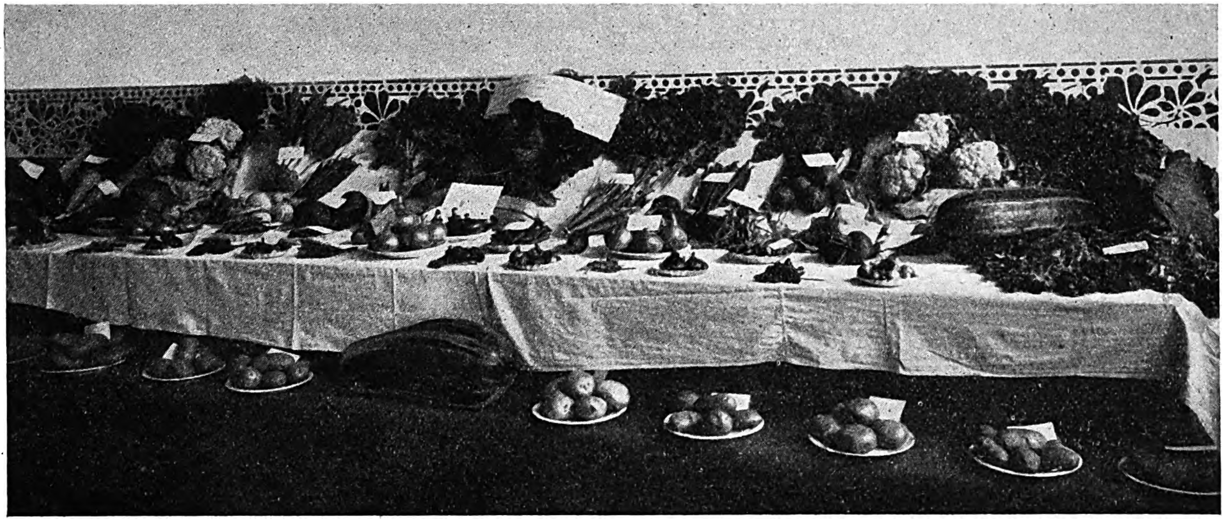

FIG. 116.—YPRES HORTICULTURAL EXHIBITION: GROUP OF VEGETABLES GROWN BY THE BRITISH RESIDENTS.

NATIONAL DAHLIA SOCIETY.

THE annual exhibition of this Society was held in the Royal Horticultural Hall, Westminster, on Wednesday, September 14, and was the largest show held by the Society in post-war times. It is pleasing to record the entries in the amateur classes showed a decided advance over previous years, while the trade exhibitors greatly enhanced the value of the exhibition from a spectacular point of view.

The old Show and Fancy varieties appear to have lost their popularity altogether, for in the premier class for twenty-four varieties, distinct, there was only one entrant, Messrs. Wm. Treseder, Ltd., Cardiff, who were awarded first prize, for good examples of Dazzler, Tom Jones, Purple Prince, J. Ashby, Mrs. Langtry, Mabel, Colonist and Harry Keith. The next class for twelve blooms was represented by two entrants, Mr. A. T. Barnes, Bedford, securing first position with nice, clean flowers of Gold Medal, Mrs. Saunders, Peacock, Merlin and Lord Salisbury. Mr. H. Lambert, Raleigh, was second, and he had good examples of Sirdar, Mrs. D. Saunders, Claret Cup and Mr. Chamberlain.

Cactus Varieties.

The class for twelve varieties, six blooms in a bunch, is usually regarded as the most difficult class in the schedule. Mr. H. Woolman, Shirley, Birmingham, and Messrs. J. Stredwick and Son, St. Leonards-on-Sea, were the only competitors, and secured the prizes in the order named. It would be difficult to find fault with either exhibit, though Mr. Woolman had the largest flowers and perhaps the best finish. The varieties employed in this instance were Alabaster, white; Ballet Girl, very fine, white and orange; Beauty of Penshurst, pink on a yellow ground; A. T. Barnes, pink and yellow; Yellow Bird; Thos. Want, yellow, suffused pink; Sidney Jones, deep pink; Silverhill Park, white; E. J. Robbins, crimson scarlet; and Essex, yellow. In Messrs. Stredwick's stand were noted Mrs. W. Jackson, salmon-pink; Elsie Prior, yellow, suffused salmon; and Satisfaction, yellow, tinged lilac. In the class for twenty-four distinct varieties, Mr. H. Woolman again led with fine flowers of H. Strutt, deep crimson; Ballet Girl; Sidney Port, yellow, suffused bronze; E. J. Robbins; Champion, crimson; May Flower, white; Essex; Mary Murray, bronzy red; Alabaster; Yellow Bird, extra fine; and Exhibitor, a large crimson; while Messrs. Stredwick had fine flowers of Mrs. A. Harvey, Doreen Woolman, white with rosy tips; Elsie Prior; Mammoth, purple with lighter tips; and John Riding, crimson. Mr. H. Lambert was third.

In the class for twelve blooms Messrs. Wm. Treseder, Ltd., were successful, having good flowers of Mary Murray, Edgar Jackson, J. Emberson, Essex and Abbotsford. Class 6 was for six blooms, one variety, and Mr. H. Woolman secured first prize with excellent examples of Torchlight, a beautiful reddish-bronze, followed by Mr. H. Lambert, who had finely coloured flowers of Ballet Girl. Messrs. J. Cheal and Sons, Ltd., were the only exhibitors of garden Cactus Dahlias, in twelve varieties, arranged in vases with any hardy foliage, grasses or berries, and were deservedly awarded the first prize. The chief varieties were Mary Purrier, scarlet; F. W. Fellowes, orange; Edgar Jackson; Guardian, crimson; Elsie Prior; Miss Eckert, white, suffused pink; and Rival, deep red.

Other Sections.

All Pompons are now exhibited in vases without artificial support, thus eliminating the wire frames. First prize in the premier class for twelve varieties, ten flowers in each vase, was well won by Messrs. J. Cheal and Sons, Ltd., who staged excellent examples of Douglas, crimson; Emily Hopper, yellow; Queen of Whites; Girlie, heliotrope; Bacchus, scarlet; Adelaide, blush, edged lavender; and Tommy Keith, crimson, tipped white. Mr. A. T. Barnes was second, and Messrs. Waterer, Sons and Crisp, Ltd., third.

The modern Star varieties were represented in a single class for twelve varieties, ten blooms each, in vases. Here Messrs. J. Cheal and Sons, Ltd., were well ahead with an exhibit tastefully arranged. The most attractive sorts were Gatton Star, salmon, shaded copper; Purley Star, rich carmine; Epsom Star, bright scarlet; Leigh Star, salmon pink; Hove Star, crimson-scarlet; White Star and Yellow Star. Messrs. Waterer, Sons and Crisp, Ltd., followed with good examples of Epsom Star, Woodhurst Star, cerise suffused with rose; Yellow Star and Mrs. Rowett, amber, tipped rose.

Messrs. J. Cheal and Sons were successful for twelve varieties of single Dahlias in vases, staging typical exhibition flowers of Albatross, pure white; Owen Thomas, scarlet, tipped yellow; Beacon, yellow; Winona, deep maroon and Lady Bountiful, deep rose. Mr. H. Lambert was second.

Large Paeony-flowered Dahlias were an attractive class, the first prize going to Messrs. Wm. Treseder for excellent flowers which, unfortunately, were not named. Messrs. J. Cheal and Sons were second, while Messrs. Waterer, Sons and Crisp were third. The Miniature Paeony-flowered section found Messrs. Wm. Treseder leading with a good collection, including Our Annie, yellow and pink; Cherry Red, suffused orange; Irma, soft rose, with orange base; Miss M. Hay, pink; and Bishop of Llandaff, crimson with coppery foliage. Mr. A. Cobb, Shinfield, Reading, came second, with nice bunches of Mrs. A. S. Galt, orange-red, with dark foliage; and Charles E. Pearson, orange. Mr. W. Yandell, Maidenhead, was third. In a smaller class for two vases of the same type, in mixed varieties, to exhibit their decorative value, Messrs. J. Cheal and Sons were placed first, followed by Mr. W. Yandell and Messrs. W. Treseder in the order named.

There was a capital competition in the large decorative class for six vases of six blooms each; the first prize was well won by Mr. H. Woolman, who arranged some splendid specimen flowers; the varieties were Mabel Lawrence, crimson-scarlet; Trentonian, copper and gold; Daily Mirror, pale lilac rose; Elinor Vandeveer, mauve; and Golden Fleece, golden-yellow, tipped white. Messrs. Wm. Treseder were second, with fine examples of Jersey Beauty and H. B. May; third, Mr. F. Nagels, Belgium.

The Collerette type was only represented by Messrs. J. Cheal and Sons, who staged a nice collection of twelve varieties for which they received the first prize. The smaller class for six varieties resulted in a better competition, Earl Beatty (gr. Mr. A. Barrett), Reigate, won the first prize, followed by Mr. H. Woolman, with Messrs. Wm. Treseder, third.

Competition was good in the amateur classes, the leading prize-winners being Mr. G. F. Drayson, Buckhurst Hill; Mr. A. Brown, Leagrave; Mr. C. Luckin, Pulborough; Mr. W. G. Cramp, Streatham; Mr. A. T. Barnes, Bedford; Mr. A. Evans, Englefield Green, and Mr. F. Chennells, Wheathampstead.

The Monro Challenge Cup for a display of floral designs was won by Messrs. Wm. Treseder, for the third time in succession, and the award thus becomes their property; the second prize was awarded to Mrs. W. H. Broughton (gr. Mr. A. Evans), Englefield Green, who staged on a small scale but the designs were well executed.

Decorative Classes.

The floral classes were well filled in most cases and proved a source of attraction. There were six tables decorated with Star varieties entirely, Mrs. C. A. Tisdale, Woodford, winning first prize with a pleasing arrangement of Salmon Star, which describes the colour. Mr. D. B. Crane, Highgate, was second, using Epsom Star; while Miss M. Woolman, East Grinstead, came third with the well-known Surrey Star.

The class for tables, in which any Dahlias except the Star section could be used, attracted eight competitors, Mrs. C. A. Tisdale being placed first with an arrangement of Lady Mackintosh, coppery yellow, suffused with rose, which was very effective; Mrs. Courtenay Page, Enfield, secured second prize with an arrangement of Winter Sun, a miniature Paeony-flowered variety, bright red with an orange centre; berried Berberis was also used here. Miss Woolman was third with a table of Collerettes—Clansman, light mauve, and Strathmore, soft pink, flushed amber—a pretty combination.

For a single vase of Dahlias, Mrs. Yandell, Maidenhead, had an arrangement of Delice, pink, and Mr. C. H. Dresselhuys, silvery-pink, with appropriate foliage; this was awarded first prize. Miss M. Woolman employed singles and Pompons with good effect for second place, while Mrs. R. Janes, Streatham Common, was third with an arrangement of Collerettes.

The class for a vase of Dahlias arranged for effect with any kind of foliage also received ample support. Mrs. A. J. Cobb, Shinfield, Reading, won first prize, using Hilda D. Wheeler, a miniature Paeony, salmon rose in colour; Mrs. W. Yandell was second, with Joyce Goddard, while Miss M. Woolman came third, using the Cactus variety Edgar Jackson, of coral colour. Miss M. Woolman had the best decorated basket, with crimson and scarlet shades; Mrs. C. A. Tisdall followed, using the amber and orange varieties—Marie Houtman, Marianne and Mrs. Scrimgeour.

Mr. J. Emberson, Walthamstow, won first prize for a bowl, and employed the well-known variety, Andreas Hofer, and a small white Pompon. Mr. Wm. Yandell was second, while Mrs. Courtenay Page was third. In the class for three vases for a sideboard decoration, Mr. J. Emberson was the winner, using Andreas Hofer and a pale yellow Pompon; Mrs. Wm. Yandell came second with vases of yellow Pompons. Miss M. Woolman followed with a pale yellow arrangement in Cactus, Collerette and Pompon sorts.

The class for a single vase of Paeony-flowered varieties received good support; Mr. J. Emberson led with the scarlet variety Radium, which has excellent stems; Mr. A. J. Cobb was placed second with one of his own varieties, Mrs. Skevington, amaranth-pink on orange, an effective variety; Mr. D. B. Crane, third.

Trade Exhibits.

The trade exhibits occupied the entire wall space of the hall, each exhibitor being allowed about thirty feet run. Mr. J. Woolman, Shirley, Birmingham, relied chiefly on Cactus and large decorative varieties which were very fine, especially the Cactus sorts, Harry Strutt, rich crimson-scarlet; Yellow Bird, excellent; with the decorative Mabel Laurence, crimson-scarlet; Locarno, burnt amber; King Tut, burgundy; Jack Hobbs, creamy white; Rosa Taylor, dark maroon; and J. L. Crowther, buff apricot (Large Gold Medal).

Mr. J. B. Riding had an arrangement chiefly of the large decoratives, interspersed with Charm, Pompon and other decorative varieties. Some of the most striking were Susan G. Tevis, a huge mauve variety; Cigarette, orange, tipped white; Jersey Beacon, brick red, with a buff reverse; Mabel Laurence; Sheba, deep rose; Talisman, crimson; Carmencita, yellow, speckled scarlet; Nichu, pale yellow; Mrs. I. de Warner, bright mauve; and Shadow Lavender, pale mauve with a deeper centre. (Large Gold Medal.)

Messrs. Carter Page and Co., Ltd., presented a very tasteful display, arranged in large groups, of Prestige, Murillo, Andreas Hofer, Pink Favourite, The Prince, Orange Boven, and Secretary Voors. (Gold Medal.)

Mr. H. J. Jones, Lewisham, staged one of his well-known displays containing groups of The Clown, Dr. Helmuth Spath, Reginald Godfrey, Robert Trent, Prestige, Andreas Hofer and Acclamation. (Gold Medal.)

Mr. J. T. West had a fine display containing several Cactus novelties and other standard varieties, including Sparklet, a miniature Paeony, rich plum colour; Lilian C. Page, orange; Ullswater, yellow, suffused rose; and W. D. Cartwright, gold, a giant flower; while Cactus varieties occupied the front line. (Gold Medal.)

Messrs. Waterer, Sons and Crisp, Ltd., were awarded a Silver-Gilt Medal for a group which included, among others, Macdonald, scarlet decorative; La France, rose, tipped gold; Madame Wurfbain, purple; and Jersey Beauty.

Messrs. J. Cheal and Sons had a representative exhibit mostly arranged in tall pyramids, a few of the most striking sorts being Mrs. D. Hepburn, a large decorative sort, bright crimson; King Harold, maroon; Coulsden, a striking miniature variety, crimson, tipped gold; and a good collection of Star varieties. (Silver Medal.)

Mr. J. **Emberson** exhibited a bright display, his best sorts being Cactus Ballet Girl, white, edged orange; The Imp, almost black; Andreas Hofer and Prestige. (Silver Medal.)

Mr. H. **Hemsley** had a mixed exhibit of Dahlias and excellent dishes of fruit. The chief varieties were Joyce Goddard, The Clown, Mrs. Crowley and Ebor. (Silver Medal.)

Mr. **Bernard Waterhouse**, Crewe, had a small but well-grown exhibit of the decorative types very tastefully arranged. (Silver Medal). Mr. **Charles Turner** also contributed a small collection of decorative varieties for which he received a Silver Medal. Messrs. **Jarman and Co.** occupied a corner of the hall very successfully; they were especially strong in Cactus varieties, well grown and well displayed. Collerettes and Pompons were also included in variety. (Silver Medal).

The **Dutch Dahlia Society** arranged a good display of their novelties in baskets, very tastefully. A few of the best were Madame E. Ludwig, bright crimson; Anna Kappel, amber, suffused rose; Delicata, heliotrope, shaded white; Cerise Queen, cerise, with a silvery reverse; W. Mengelberg, a beautiful orange; Red Emperor, and Aurantiaca, amber, with deeper tips. (Silver Medal.)

BRUSSELS INTERNATIONAL HORTICULTURAL SHOW.

When Belgium celebrated the seventy-fifth year of its independence it did so on a grand scale, and some of the fine buildings erected in connection with the fêtes and exhibitions connected with that great event are still standing. One of them—a grand hall, lofty, spacious, light and airy—was used from September 10 to September 18 for the purpose of a great horticultural exhibition. We believe the hall to be larger than the Agricultural Hall at Islington, and it is certainly loftier and lighter but, unfortunately, it is not sufficiently well supplied with electric light to permit of its being kept open during the evenings so soon as the days draw in.

The dates of this horticultural exhibition synchronised with the twenty-fifth birthday of the Federation of local horticultural societies, or, rather, of societies whose members are chiefly concerned with commercial horticulture, either as growers of fruits and vegetables for home use and export, or the cultivation of plants for export. There are over two hundred of these societies in Belgium, and they are grouped geographically, *i.e.*, by towns and districts, then by provinces, and finally there is the general federation. *La Tribune Horticole* is the official organ of the Federation, but under M. Gentil's editorship it is something more—a useful general epitome of horticultural activities in Belgium. As Director of the Horticultural section of the Ministry of Agriculture, our friend, M. H. Van Orshoven, takes a keen interest in the work of these societies and arranges courses of lectures and series of experiments (varieties and cultivation) at various centres. From this—and the fact that this Federation had a conference and outing lasting over several days—it will be gathered that M. van Orshoven and M. Gentil have had a very busy time lately.

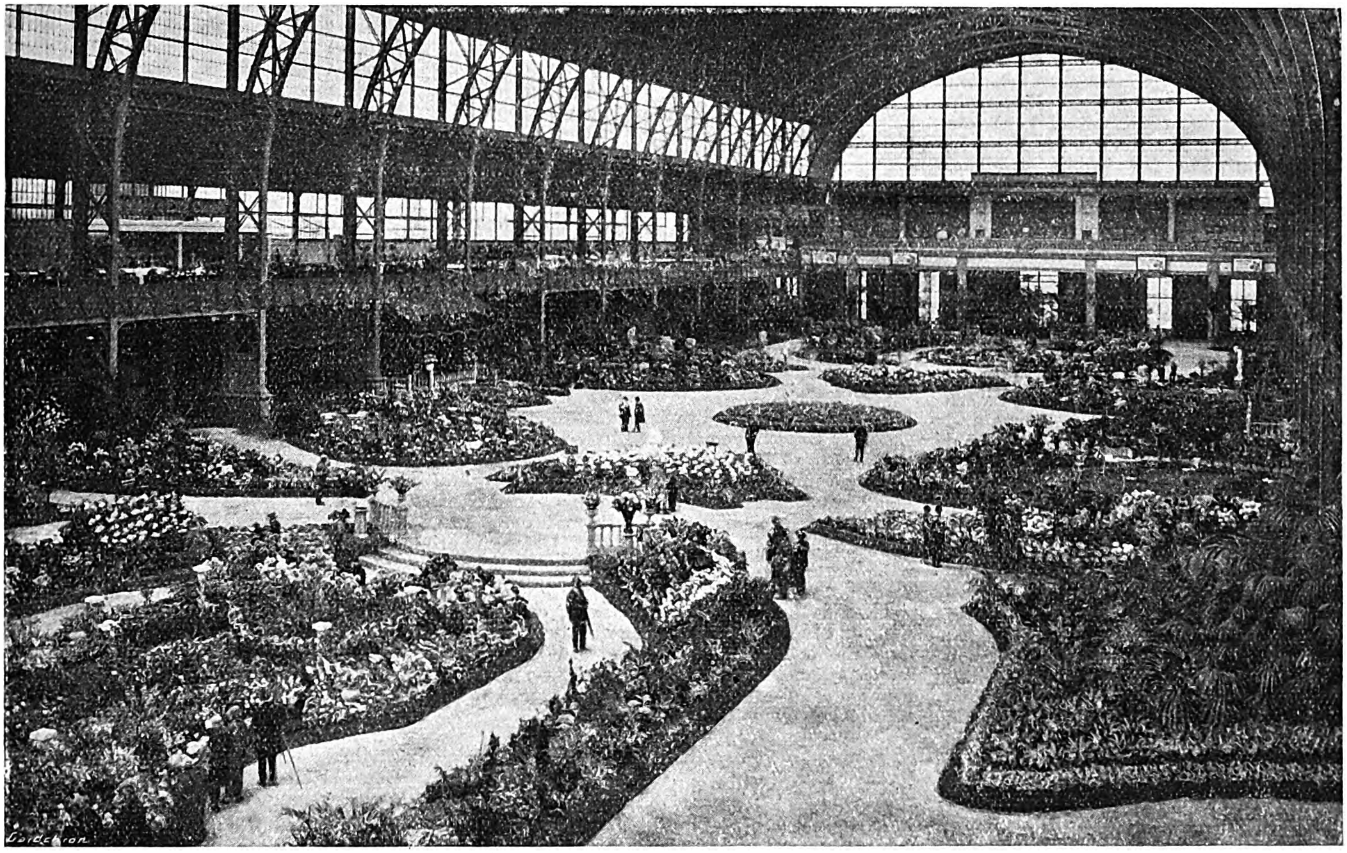

FIG. 117.—GENERAL VIEW OF THE INTERNATIONAL HORTICULTURAL EXHIBITION AT BRUSSELS.

But to return to the exhibition. It was so great as to surprise us—for there were also exhibits of fruit trees and shrubs outside the building—and yet we were disappointed with it. Perhaps we expected too much, and no doubt the memory of many great Ghent Shows created unfair comparisons. It was largely a cut-flower show, with Dahlias as the dominant feature; nevertheless, there were plants in abundance—big Palms, Cycads, Tree Ferns, Dracaenas, Cordylines and Rex Begonias, but in so vast a hall—and especially as these were for the most part arranged under the wide galleries—they were as a small "drop in the bucket" in regard to the general effect, as viewed from the end galleries.

The whole arrangement was on continental lines (Fig. 117), the floor space being laid out as a great garden, and exhibitors had to contribute various items to the general scheme. The central feature was a huge circular bed of fragrant Heliotropes, and delightful as this was we believe that if the Flandria Company or M. Draps-Dom had filled this central area with their big Palms, Cordylines, etc., a more imposing effect would have been produced. However, all this is a matter of taste.

We offer hearty congratulations to M. Eugene Draps, on whose shoulders has fallen the great burden of this show—and his Committee for getting together such a great show in September, in spite of continuously unfavourable weather, the low value of the Belgian franc, and other post-war difficulties. A "tombola" had to be arranged to secure the necessary funds for the show for, although the Government, the Province of Flanders and the City of Brussels smiled on the project, their smiles did not materialise into financial guarantees.

Judging commenced at 9 a.m. on the 10th inst, and the Jury was an international one, Belgium, France, Holland, Great Britain, Germany and Poland being represented on it. The Juré d'Honneur, to whom fell the task of awarding the various Prix d'Honneur, consisted of M. Nomblot, Secretary of the Société Nationale d'Horticulture de France, as President; M. Lucien de Cock, Secretary of the Ghent Society, as Secretary; Comte de Kerchove de Denterghen, Governor of East Flanders; Baron de Kerchove d'Exaerde, President of the Federation of Belgian Horticultural Societies; M. Chas. Pynaert, Brussels; M. Paras, Gardener to the King of the Belgians, Laeken; Mr. E. Krelage, Haarlem; M. H. Van Orshoven; M. du Pre, President of the Société Royale La Flore, Brussels; M. Firmin Lambeau, the well-known amateur Orchidist of Brussels; Mr. Chas. H. Curtis (*The Gardeners' Chronicle*), and Mr. Rothe, Berlin. M. Roekens, of the Brussels Botanic Gardens was in attendance.

Mr. J. Coutts, Assistant Curator, Royal Gardens, Kew, and Mr. Albert E. Amos, Secretary of the National Dahlia Society, served on other sections of the Jury.

M. Eugene Draps presided at the luncheon, and Their Excellencies the Minister for Agriculture and the Minister for Science attended the opening ceremony, accompanied by many members of the Corps Diplomatique.

In addition to the large groups of Dahlias, Palms and other foliage plants, the leading features of the exhibition were the fine displays of fruits—Grapes, Apples and Pears, Orchids and big collections of vegetables.

Dahlias.

M. Francois Nagels, of Wilryck, was the largest exhibitor of Dahlias, and his contribution, one of the largest in the show, was awarded a Prix d'Honneur. The flowers were arranged in baskets on tall stands with a few lower baskets here and there. The whole exhibit consisted of groups of various shapes and sizes arranged to form a Dahlia garden. More flowers were needed to make the display really effective. Leading varieties were the white Gloire de Aalsmeer; Nagel's Roem, salmon; Mrs. O. de Warner, purplish-mauve; Ambassador, scarlet and yellow; Roi des Jaunes, rich yellow; Madame Eugene Draps, mauve and red; Turkoois, purple and gold; Clown, scarlet and white; Avenir, old rose; and Ehrenpriess, rich pink and rose-red. All these were large decorative varieties of the type now very popular on the continent. M. Defensie, Waerhghem, had an exhibit of Dahlias wherein Tully, salmon and yellow; Naegel's White, Meny Carlee and the popular pink and cream and Andreas Hofer were well shown. The Dahlias from M. Louis van Houtte's establishment in Ghent, consisted of bold lots of decorative varieties margined with Pompon sorts. Dahlias suitable for public gardens, including many of the varieties mentioned in these notes, were exhibited in quantity by the Parks Department of the City of Antwerp, over which M. Van Rysselbergh presides so ably.

Andreas Hofer was finely shown by M.M. J. Hoogensteyn and Sons, of Bennebroek, Haarlem, in one of the best arranged groups in the show; this display contained a beautiful scarlet and gold decorative variety—alas! unnamed—with blooms four inches to six inches in diameter. The flowers are of good form and borne on stiff, long stems; we believe it would prove a good garden sort, although, of course, we have not seen it growing.

Secretary Voorn, a large salmon decorative variety, the well-known Artus and a rich, self-yellow, decorative variety, named Narcissus, were attractive Dahlias in M. F. Braen Straus' exhibit from Andenkerke. In this and several other groups the variety Rapallo was shown; this is crimson, with gold base and buff tips; the florets are very broad and several of the disc florets assume a similar shape, but stand more or less erect, thus giving the flower a curious although by no means unattractive appearance.

M. Ballego, of Leiden, one of the leading Dahlia growers in Holland, showed the new Zinnia-flowered variety Apolldro; this is a miniature decorative Dahlia of rich crimson-scarlet colour that looks particularly well when the golden pollen covers the disk; stems and foliage are dark, bronzy green. A new Cactus variety of good form and deep coral red colour was shown by Mr. Albert E. Amos, and bore his name; this and also the previous variety received a Certificate of Merit.

French Section.

The French section occupied a "garden site" at one end of the hall. M.M. Vilmorin-Andrieux et Cie, Paris, filled the central position with a large display of Celosias and Cockscombs—the latter in a great variety of colours—Gladioli in large baskets and massed decorative Dahlias at both ends. This firm also exhibited vegetables and salads in bewildering variety, and Melons of many sizes and colours.

M. Cayeux le Clerc, Paris, contributed Dalias in variety, notably Monitor, orange; Madame Else Peeters, mauve and white; Raphael, orange and scarlet; and the big, handsome Jersey Beauty, of lovely old rose colour. The quaint "Star" Dahlias, in which the lateral margins of the ray florets incurve, were shown in great variety by M. Martin, of Degoin. Etoile Degoinaise was very much in evidence, but the variety we liked best was Roi Albert, yellow and deep brown. We overheard an English visitor describe these as Star-fish Dahlias.

M. Anguste Nonin, who was present with his son, exhibited Dahlias: Bordeaux, a very big crimson decorative variety; La Lorraine, a yellow, decorative Cactus sort that grows about four feet high; Andreas Hofer; Madame Diesny, mauve; Pride of San Francisco, salmon; Racine, amber-yellow; Maia, salmon; and Falbata, dull flame, were all shown well; the two last-named gained Certificates.

M. H. Le Blevence, Bois Colombe, had a fine lot of Cattleya amabilis alba in his group of Orchids, and associated these with C. Hardyana alba, and Laelio-Cattleya Madame J. Andre Lazard. M. Vacherot Lecoufle, Boissy St. Leger, exhibited seedling Orchids from the germination stage (in flasks) onwards, and submitted specimens of Cypripedium Maudiae, Masdevallia Veitchii, Phalaenopsis Rimestadiana, and the golden Oncidium varicosum Rogersii.

M.M. Maron et Fils, Brunoy, exhibited Orchids in the French section, and their group was notable for the many freely-flowered plants of Vanda coerulea it contained; with these were Phalaenopsis Rimestadiana, Cattleya Hardyana, C. H. alba and C. Rutilant.

The French section also contained Pears and Apples from M. Paul Lecolier; and various dwarf shrubs and Sempervivums from the Maison Ferard.

Orchids.

The main display of Orchids was in the gallery at one end of the hall, and the finest exhibit was the one from M. Firmin Lambeaux. In this we noticed many well-grown plants of Cattleya Carmen, C. Enid in variety, the white C. Madame Leten, Brasso-Cattleya Maronii alba, Laelio-Cattleya Liberation, L.-C. Lustrissima, and Cypripedium Maudiae. M. Firmin Lambeaux received the Prix d'Honneur for Orchids.

Messrs. Stuart Low and Co., Enfield—the only British firm that exhibited—had a very bright group of Orchids, in which fine spikes of Oncidium varicosum Rogersii made a capital background for Cattleya amabilis, C. Venus, Brasso-Cattleya Ilene, Laelio-Cattleya Iris, Odontoglossum Alcimeda, O. Uro-Skinneri splendens, Cypripedium I'Ansonii, C. Massaianum and Brassia caudata.

M. Maurice Verdonck, Ghent, contributed a group of Orchids, consisting chiefly of Cattleya amabilis, C. Hardyana alba and C. Warscewiczii. In M. Janssens' group, Cypripedium Parishii, Stanhopea eburnea and Odontoglossum grande were conspicuous plants.

Foliage Plants.

The principal exhibit of Palms and foliage plants was a big group of well-grown Kentias in variety, Latanias, Phoenix Roebelinii in fine condition, Cordylines, green and variegated, Cocos in variety, and many others; this was arranged near the foot of one of the staircases leading to the gallery; indeed, it was partly under the gallery, and therefore not so effective as it might have been. This exhibit from the Flandria Company, Bruges, obtained a Prix d'Honneur.

M. J. L. Draps-Dom, Brussels, set up a fine lot of big Palms, clean and of rich deep green colour; with these were big specimens of Cibotium Scheidei, various Cycads, Angiopteris evecta, Pandanus of sorts, and Agaves. Phoenix Roebelinii was well shown by M. Goosens, Brussels, who had a background of larger Palms and a groundwork of Selaginella Watsoniana. Cordylines, Alocasias, Dracaenas and Palms were also grouped effectively by M. L. Delarue-Cordon, Ledeberg.

Coleuses appear to be popular in Belgium, judging by the large groups of these plants and the many examples that figured in mixed groups. The very large display made by M.M. Camille Hendrix et Fils, Uccle, near the bandstand, attracted a great deal of attention; very few of the varieties were named but they included some seedlings with leaves of unusual size—so much as fifteen inches wide—but of rather sombre colouring. If bright-leaved sorts of similar type were forthcoming they would be very useful grown either as bushes or as single-stemmed specimens.

M. Alphonse Lambert was another large exhibitor of Coleuses, and his well-grown plants were arranged effectively.

Another arresting group was the huge one of varieties of Begonia Rex, exhibited by M. Janssens, Marienberg. Some of the specimens were nearly four feet across, and there were at least a hundred plants. Some of the outstanding sorts were Minister Balls, silver and green; Madame Rene Rysselberg, green-edged, silver, green and purple; Roi Albert, deep olive green, silver and silvery purple. This fine display was awarded a special prize for excellent culture and the new varieties it contained.

Various Exhibits.

M. Draps Dom contributed a small and interesting Japanese garden, and also a series of miniature Japanese gardens in bowls and pans, a collection of Japanese shrubs, and a selection of Cacti.

From the Brussels Botanic Garden came a collection of Belgian horticultural and botanical books and a series of portraits of celebrated Belgian botanists and horticulturists—Rodegas, Linden, Van Mons., Verschaffelt, Cogneaux, Louis van Houtte, van Geert and Comte de Kerchove.

The Colonial Department of the Belgian Government submitted a realistic display of economic plants grown in the Congo, planted around a native hut, with models of native folk standing around.

The Officials of the Forest of Soigne contributed an interesting exhibit of timbers and the pests that attack timbers, while another exhibit of trees and shrubs came from the Arboretum at Turvueren.

Garden plans and paintings of flowers filled several bays at the end of the gallery.

Roses were shown in large numbers by MM. Juchem et Fils, Leon Kerkvoorde, M. Francois Dervais, M. Alphonse Braeckmans, M. H. Vlaminch and MM. Buyb Freres, but in no case were the flowers of good quality, the wet weather having dealt severely with them.

M. Eugene Draps submitted a very attractive collection of floral designs and grouped them admirably.

Fruits.

Fruits were exhibited uncommonly well and extensive displays were made in one of the wide, well-lighted galleries.

The Horticultural School, Louvain, contributed a fine collection that contained splendid examples of Pears Beurré Hardy, Triomphe de Vienne, Beurré Clairgeau, Beurré de Naghan, Beurré Sterckmans, Madame Treyve, Beurré Baltet Pére, Beurré Mortillet, Durondeau, and Bergamot Phillipot—a variety unknown to us. This fine collection was awarded a Prix d'Honneur. M. C. Coene-Geets, Malines, contributed good specimens of Golden Noble, Bismarck, Blenheim Pippin, Transparent de Croncels, Emperor Alexander, Peasgood's Nonsuch and Reinette du Canada Apples, and although few were well coloured all carried a fine "bloom."

A large and interesting collection of varieties of Pears and Apples came from M. Roumie, Eisneux; many of these were uncommon sorts but it was quaint to find the familiar Peasgood's Nonsuch labelled "Sans Pareil de Peasgood."

A magnificent exhibit was staged by the Horticultural School of Vilvoorde, where practically every thing is grown on commercial lines with great success. There were vases of popular Dahlias, many splendid specimens of the yellow-margined Sanseviera Laurentii and fine plants of variegated Bougainvilleas, but the fruits were the great feature. These were all first class specimens, clean and of large size, set up in white-papered boxes. A few outstanding Apples were Peasgood's Nonsuch, Emperor Alexander, Bismarck, Belle de Boskoop Belle de Pontoise, Cellini, Queen, Reinette d'Etoile and Cox's Pomona, while the best Pears were Beurré Diel, Louise Bonne of Jersey (finely coloured), Le Lectier, Passe Crassane, Williams's Bon Chrétien, Pitmaston Duchess, Triomphe de Vienne, President Roosevelt, Marguerite Marillat, Clapp's Favourite, Doyenné du Comice and Marguerite Marillat. We have never seen such fine fruits in such quantity.

Grapes were exhibited in great style and number. The huge "bunches" shown by MM. Ed. Stouffs et Fils, La Hulpe, were some of the finest examples of skillful manipulation we have ever seen. The were made-up bunches and how many clusters had gone to the make up of one "specimen" we cannot state, as no one would tell us, and a Commissionaire on duty saw that the command, "do not touch" was religiously observed. The effect of these aggregate bunches may be gathered from the statement that Cannon Hall Muscat weighed 12 kilos; Roi Albert (black), 12 kilos; Moranet, 12 kilos and Gros Maroc, 19 kilos. Needless to state, this exhibit of "Grapes of Eshcol" never lacked a crowd of excited visitors—a British visitor described them as "fiction founded on fact."

The Hoeylaerte Growers made a fine display of excellent bunches of Alicante, Roi Albert, Moranet, Black Hamburgh, Gradis, Muscat of Alexandria and Gros. Colmar Grapes, and some fine Peaches and Canteloupe Melons. M. Arthur de Smet and M. Willy de Smet, both of Groenendaal, each exhibited Grapes as packed for export, and these included some capital bunches of Cannon Hall Muscat and Muscat of Alexandria, while the last-named exhibitor included big clusters of Gradiscat, a white Grape of moderate Muscat flavour.

Vegetables.

Fine displays of vegetables in great variety were made by various groups of market gardeners. These displays included a greater variety than we are accustomed to see in England and included a large series of herbs, Chicory, Dandelion, tiny Brussels Sprouts, Celeriac, huge Savoys, several sorts of dwarf Celery, white Cucumbers, Capsicums, Aubergines, Seakale Beet, Lamb's Lettuce and variously coloured Beans. One of the best of these displays was made by the market gardeners of Namur.

ABERGAVENNY.

This successful event was held on September 1, 1927, in Bailey Park, Abergavenny, and both the competitive and honorary horticultural exhibits were more numerous and of a higher quality than in previous years. Outstanding features were the superb collection of vegetables, Onions, fruits, Roses and collections of hardy flowers. Among the exhibits not for competition a Gold Medal was awarded to King's Acre Nurseries, Hereford, for pot fruit trees. The same firm also gained a Gold Medal for a tastefully arranged group of cut flowers. Messrs. I. House and Son, Bristol, put up a fine lot of Scabious, for which they gained a Silver-gilt Medal. Mr. H. Townsend, Abergavenny, secured a Gold Medal for a miscellaneous display of cut flowers, the whole most tastefully arranged. A new exhibitor, Mr. S. G. Williams, of Abergavenny, also gained a Gold Medal for a meritorious group of flowers and fruits.

From John Wilson, Esq., Hereford, came a well-staged group in which Gladiolus played a conspicuous part, and was awarded a Silver-gilt Medal.

In the class for the best trade exhibit, the Vaughan-Morgan Challenge Shield and Silver-gilt Medal were won by Messrs. Fraser and Brown, of Abergavenny. They staged a bright and effective group. The second prize, consisting of a Silver-gilt Medal, was secured by Messrs. Pitt and Co., Abergavenny, who had delightful vases of Carnations, Dahlias, etc., while the third prize, a Silver Medal, was won by Messrs. English and Son, Gloucester, with a nice collection of Roses. Messrs. J. Basham and Sons, Newport, easily led for Roses with exquisite blooms. The second prize was awarded to Messrs. English and Son, Gloucester.

For a collection of twelve dishes of hardy fruit, the Challenge Cup and first prize was awarded to Miss C. Solly Flood, Porthmawr.

The class for a collection of vegetables attracted five or six first-class displays, and the first prize and Challenge Cup was deservedly won by Mr. L. R. Pyne (gr. Mr. J. Evans), Abergavenny. Mr. A. Turner, Aberavon, was a good second, and Mr. W. Evans, Barry, third.

CARDIFF AND COUNTY HORTICULTURAL.

The thirty-third annual show of the Cardiff and County Horticultural Society was held in the Drill Hall, Cardiff, on the 7th and 8th inst. The exhibits attained a satisfactory standard, fruits and Roses being outstanding features. The attendance was small on the opening day, and possibly inclement weather kept the public away on the second day. Mr. Donald Cory, Chairman of the Society, who presided at the opening ceremony, expressed the view that the people of Cardiff lacked interest in horticulture. That can scarcely be, for Cardiff is a city of beautiful public parks and private gardens, but it is regrettable that her people and the people of the principality generally do not accord a greater measure of support to this very desirable show.

The following are the principal awards:—

Collection of dessert fruit: First, Mr. W. H. Brian, Cwrt-y-rala; second, Captain Fletcher, Margam Abbey. Two bunches of Grapes: First, Dowager Lady Watson, Newport; second, Mr. W. H. Brain; third, Mr. J. E. T. Turner, Lisvane. Six dishes of dessert Apples: First, Mr. W. H. Brain; second, Mr. J. W. Pyman; third, Rev. A. C. Lee, St. Andrews. Six dessert Pears: First, Mr. W. H. Brain; second, Mr. J. E. T. Turner; third, Rev. A. C. Lee. Dish of nine dessert Plums: First, Mr. W. H. Brain; second, Capt. Fletcher; third, Rev. A. C. Lee.

Collection of Vegetables: First, Mr. D. P. Jones; second, Mr. S. F. Morgan; third, Mr. F. Jenkins.

Dish of twenty pods of Peas: First, Mr. W. H. Brain; second, Mr. H. Coombes; third, Mr. D. A. Burns.

Dish of twenty Runner Beans: First, Mr. W. H. Brain; second, Mr. E. J. Mathews; third, Mrs. M. Morgan Lewis.

Dish of six bulbs of Premier Onions: First, Mr. J. E. T. Turner; second, Mr. T. Hale; third, Major Gaskell.

The best collection of Roses (open class) was shown by Messrs. Wm. Treseder, Ltd., Cardiff; second, Messrs. J. Basham and Sons, Bassaleg. Messrs. Treseder also showed the best collection of Dahlias, arranged for effect; second, Mr. H. Clarke, Taunton.

NATIONAL CHRYSANTHEMUM.

September 12.—At their first meeting of the season, the Floral Committee of this Society found more novelties than usual for their consideration, and awards were made to the following early-flowering varieties, while the Committee wished to "see again," and accompanied by a plant, the variety Bedding Yellow, a compact, bright yellow variety, shown by Mr. H. Shoesmith, Junr.

First Class Certificate.

Mayford Bronze.—A bright and attractive flower which belongs to Section II, i.b. The disbudded blooms have straight, rolled florets of bright bronze colour. Shown by Mr. H. Shoesmith, Junr.

Gloria.—This is a rich yellow variety of the same section as the above. The flat florets droop at their tips, making a graceful flower of good market size and plenty of substance. Shown by Messrs. Cragg, Harrison and Cragg.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

Mr. J. R. Butler presided at the monthly meeting of this Society at the R.H.S. Hall, on Monday, September 12. Seven new members were elected. Five members were allowed to withdraw from their deposit accounts the sums amounting to £85 15s. 7d., and one lapsed member withdrew £41 3s. 6d. The sum of £12 6s. 8d., plus £15 funeral benefit, was passed for payment to the nominee of one deceased member.

The sick pay on the private side for August amounted to £65 4s. 11d., and on the State Section, £62; maternity benefits totalled £21 10s. Sums amounting to £63 10s. 9d. were made in grants to sixteen members for dental and surgical benefits, and fourteen other cases were considered.

Mr. D. Crockett of Putney Heath was co-opted a member of the Committee in the place of Mr. J. Craik, who had resigned.

ANSWERS TO CORRESPONDENTS.

Cucumbers Failing.—*G. W.* Your Cucumber fruits are suffering from gummosis, caused by the fungus, Cladosporium cucumerinum. This disease appears in cases of excessive humidity and if your pits are covered in you would find it well to ventilate them as much as possible. You should also spray the plants with liver of sulphur and flour paste in the following proportions: 1½ oz. liver of sulphur and 1½ oz. of flour to two gallons water. Dissolve the liver of sulphur in fourteen pints of water. Mix the flour into a paste with a little water and then add more water to make two pints, taking care there are no lumps. This should be boiled, stirring it meanwhile and, when it froths, added to the liver of sulphur and mixed thoroughly. The spray is then ready for use. The diseased fruits should, of course, be removed.

Melons Failing.—*H. S.* Your Melon plants are suffering from Verticillium wilt, caused by the fungus Verticillium albo-atrum. This organism exists as an occasional infection of soils, and it is possible that infection has come from the bed upon which the pots are placed. The latter may be sterilised by steam or by means of a two per cent. solution of formaldehyde. One gallon of forty per cent. formaldehyde should be diluted with forty-nine gallons of water in a tub, and applied to eighteen square yards of bed surface. The house should be empty when this process is applied, and the inside of the superstructure should be washed down with the same specific.

Names of Fruits.—*B. J. F.* 1, Hanwell Souring; 2, Yorkshire Greening; 3, Striped Beefing; 4, Small's Admirable; 5, Lane's Prince Albert; 6, Lady Sudeley; 7, Greenup's Pippin (syn. Yorkshire Beauty). *Altho.* Apple Wealthy; Pear Jalousie de Fontenay.—*G. D.* 1, Alfriston; 2, Winter Greening (syn. Easter Pippin); 3. decayed.—*J. S.* Apple Lady Sudeley.—*A. M.* It is impossible to name the Pear, as it is only half-grown; send again when fully developed.—*J. C.* 1, Early Transparent; 2. Gladstone; 3, specimen insufficient for determination.—*Wickendew.* Probably Washington Plum.

Names of Plants.—*A. C.* Galeopsis angustifolia, the narrow-leaved Hemp Nettle which occurs mostly on chalk.—*E. C. L.* 1, Escallonia montevidensis (S. America); 2, Spiraea japonica Bumalda variegata (the last name is usually left out, as the plant often becomes green; 3, Impatiens Roylei, or Royle's Balsam, a native of the Himalayas. *K. M. R.* 1, Sidalcea candida; 2, Phyllanthus atropurpureus; 3, Nandina domestica; 4, Isoloma hirsutum.

Tomatos and Ferns for Examination.—*R. W. R.* The Tomato fruits had burst in the box when it reached us, and the material was in such bad condition that examination was impossible. The Adiantum leaves are attacked by a fungus, probably Gloeosporium. We would advise removing the diseased fronds and dipping the plants in a solution of liver of sulphur.

Communications Received.—J. B., thanks for 1/- for R.G.O.F. Box.—W. F. W.—D. G. H.—S. H. W.—J. R. G.—A. C.—W. B.—R. K.—H. M.—G. Y.—J. I. B.—T. W. M.—T. D. B.—L. E. M.—F. G C.—K. W.—R. E. A.—W. P.—A. O.—D. B.—H. D.—F. R. D.—G. B.—L. H. B.—G. E. F.—C. R.

MARKETS.

COVENT GARDEN, Tuesday, September 20th, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	5 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink	18 0 21 0
—yellow ...	12 0-18 0
—bronze ...	15 0-18 0
—white ...	12 0-18 0

	s. d. s. d.
Crotons, doz....	30 0-45 0
Cyrtomiums ...	10 0-25 0
Erica nivalis, 48's, per doz.	27 0-30 0
— 60's, per doz.	12 0-15 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris. in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 0—3 0
Roses, Polyantha, 48's, per doz.... ...	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz., bun.	8 0—9 0
—cuneatum, per doz. bun. ...	5 0—8 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. „ ...	1 0—1 6
short „ ...	0 6—1 9
Asters, white, per doz. bun.	4 0—6 0
—coloured, per doz. bun. ...	4 0—6 0
—single, coloured, per doz. bun.	3 6—4 6
Carnations, per doz. blooms .	2 0—4 0
Chrysanthemum Sanctity, per doz. blooms .	3 0—4 0
—Mrs. J. Pearson, per doz. bun.... ...	10 0-15 0
—white Duchess, per doz. blooms	4 0—6 0
—yellow, per doz. blooms ...	2 6—4 0
—bronze, per doz. blooms .	2 0—3 0
—spray, pink, per doz. bun.	10 0-12 0
—spray yellow, per doz. bun.	10 0-15 0
—spray white, per doz. bun.	9 0-15 0
Coreopsis, per doz. bun. ...	1 0—1 6
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz. ...	1 9—2 6
Daisies, Shasta, large, doz. bun.	2 6—3 0
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	9 0-12 0
Gaillardia, per doz. bun. ...	1 6—2 6

	s. d. s. d.
Gardenias, per doz. blooms .	4 0—6 0
Gladiolus, giant varieties, per doz. spikes—	
—pink shades...	1 6—2 0
—scarlet ...	1 6—2 0
—white ...	1 6—2 0
Gypsophila paniculata, double, per doz. bun.	18 0-24 0
Heather, white, per doz. bun.	4 0—6 0
Lapagerias, per doz. blooms .	3 6—4 0
Lilium speciosum album, per bun. ...	3 6—4 0
—short, per doz.	3 6—4 0
—rubrum, long, per bun. ...	3 6—4 0
—short, per doz.	2 0—2 6
—longiflorum, long, per doz.	2 0—2 6
—short, doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	30 0-36 0
Marigolds, per doz. bun. ...	3 0—4 0
Michaelmas Daisy, King George, per doz. bun.	6 0—9 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz. —Cattleyas ...	36 0-48 0
Physalis, per doz. bun.... ...	18 0-21 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—2 6
—Madame Butterfly ...	2 0—4 0
—Golden Ophelia	2 0—3 0
—Mrs. Aaron Ward ...	1 0—1 6

Cut Flowers, etc.—*continued.*

	s. d. s. d.
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 6—2 0
—Hoosier Beauty	2 6—4 0
—Liberty ...	1 6—3 0
—Molly Sharman Crawford ...	2 6—3 6
—Premier ...	— 3 0
Smilax, per doz. trails ...	3 6—4 6
Statice sinuata, mauve, per doz. bun. ...	6 0-10 0

	s. d. s. d.
Scabiosa caucasica, per doz. bun.	4 0—5 0
Stock, per doz. bun.—	
—double, white	9 0-12 0
— —mauve ...	9 0-12 0
Sweet Sultans, white, per doz. bun.... ...	3 0—4 0
—mauve, per doz.... ...	3 0—4 0
Violets, per doz. bun.	5 0—6 0

Remarks.—The unfavourable weather conditions have been responsible for a general shortage throughout this department during the past few days. Bunch spray white Chrysanthemums have been particularly short in supply, and prices have advanced also for coloured blooms. The newest arrivals in disbudded blooms are Mona Davis and Bronze Cronsel. The best quality Carnations and Roses are soon cleared at increased prices. Arums (Richardias) are the latest arrivals in this department. but the quality at present is not good. Single Violets from Devonshire and Cornwall are coming to hand in very fair condition and supplies are now increasing almost daily. Aster Amellus King George is now arriving in good condition, and Physalis is now receiving more attention for decorative purposes. Gladioli are practically finished and Giant Scarlet and Giant White are the best that remain. Statices are about finished. A few bunches of Honesty have been on sale this week.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Aubergines, per doz.... ...	2 0—3 0
Beets	4 0—6 0
Cabbage, per doz.... ...	1 0—1 6
Carrots, new	3 0—4 0
Cucumbers, doz.	3 0—5 0
—Flats, 36's, 42's	10 0-14 0
French Endive, per doz. ...	2 6—3 0
—Batavia, per doz.	2 6—3 0
Leeks, per doz.	1 6—2 0
Lettuce, round, per doz. ...	0 9—1 6
—long, per score	1 0—2 0
Mint, per doz....	1 6—2 0
Marrows, per tally...	5 0—6 0
Mushrooms—	
—cups... ...	3 0—4 6
—broilers ...	1 6—2 6

	s. d. s. d.
Onions—	
Egyptian ...	11 0-13 0
—Dutch ...	8 0-10 0
—Spanish ...	13 0-14 0
Parsnips, per cwt. ...	4 0—5 0
Peas, per bushel	4 0-12 6
Potatos—	
English ...	3 6—6 0
Radishes, per doz.	1 0—2 0
Savoys, per tally... ...	5 0—7 6
Tomatos, English—	
—pink... ...	4 6—6 0
—pink and white	4 6—6 0
—white ...	3 0—4 0
—blue ...	3 0—4 0
—Guernsey ...	3 0—4 0
—Jersey ...	3 0—4 0
—Dutch ...	3 0—4 0
—St. Malo ...	2 0—3 0
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples. English—	
—Lord Derby	4 0—7 0
—Lane's Prince Albert ...	4 0—7 0
—Bramley's Seedling ...	4 0—7 0
—Grenadier, Best, per bush. ...	4 0—7 0
—Other cookers	3 0—6 0
—Worcester Pearmain, ½ sieve	3 0—6 0
—James Grieve	3 0—4 0
Apples, American—	
—Gravenstein, per case ...	10 0-14 0
—York Imperials, per barrel ...	20 0-40 0
—Ben Davis ...	— 22 0
Bananas ...	14 0-20 0
Figs, French, per box ...	1 0—1 6
Grape Fruit—	
—Porto Rico ...	40 0-42 6
Grapes, English	
—Colmar ...	2 0—4 0
—Black Hamburgh, per lb.	0 9—1 6
Grapes, Alicante	1 3—2 3
—Gros Maroc...	1 3—2 3
—Muscat ...	2 0—6 0
—Canon Hall...	3 0—6 0

	s. d. s. d.
Lemons, Messina Boxes ...	20 0-40 0
—Naples, per case	50 0-60 0
Melons, each—	
—English and Guernsey...	1 6—5 0
Canteloupe each ...	2 0—6 0
Oranges, per case—	
—Cape Navel...	22 6-24 0
—Seedling ...	16 0-18 0
—Cape Valencia	14 0-17 0
Nectarines, doz.	10 0-24 0
Peaches, per doz.... ...	9 0-24 0
Pears, Californian—	
—Beurré Hardy	27 0-30 0
—Bartlett ...	27 6-30 0
—Comice ...	30 0-34 0
Pears, French—	
—Alexandrine, 48's, 64's ...	3 0—6 0
—Beurré Hardy, crates, 18's, 15's	4 0—4 6
—crates (64–72)	4 0—6 0
Pines, case ...	15 0-32 0
Plums—	
—Switzen ...	3 0—5 0
—Pond's Seedling	10 0-15 0
—Monarch ...	7 6-10 0
—Bush ...	5 0—6 0
—Damsons ...	6 0—8 0

Remarks.—There is practically no improvement in the unusually slow conditions prevailing in Covent Garden at the present time. It is highly probable that a few days of fine weather would have a bracing effect on the public demand for fruit, and the feeling here is "the sooner the better." Hothouse Grapes are plentiful and cheap, ample supplies arriving from Belgium and the Channel Islands, in addition to those home-grown. The Plum trade is one of the few bright sections in the business at the moment. The bulk of arrivals are Monarch, with a few Pond's Seedling, Bush and Damsons, all of which are selling freely. The Apple market is very congested with produce, and prices generally are low. There is a good inquiry for a few special Worcester Pearmains, Cox's Orange Pippin and James Grieve, also for some large cookers, but the greater proportion of fruit available is very second-rate, which is more or less usual in a heavy Apple year. Tomatos are scarce, but the absence of demand prevents any increase in selling levels, in addition to which arrivals from Jersey are increasing. Cucumbers are in shorter supply and prices have hardened. There are a few more field Mushrooms available, but cultivated Mushrooms continue scarce and dear. The green vegetable section is moderately heavy, with most items an improving business. Blackberries, both wild and cultivated, are selling well, but the quantities so far have been comparatively small. The Potato trade remains about the same as last quoted, with supplies sufficient for the demand at the present price levels.

GLASGOW.

The cut flower market was fairly active ast week and the large supplies of disbudded Chrysanthemums received each day from the South of England were readily disposed of—in some cases before the customary auction sales began—at the following prices:—Debutante, 1s. 6d. to 2s. per 6's; Pink Delight, 1s. 3d. to 1s. 6d.; Harvester, 1s. to 1s. 4d.; Betty Spark and Amber Queen, 1s. to 1s. 3d.; No. 1 White, 1s. 4d. to 1s. 9d.; Holicot Yellow, 10d. to 1s. 2d.; Holicot Bronze, 1s. to 1s. 4d.; Alcalde, 2s. to 2s. 9d. for 12's; Phoenix, 1s. 3d. to 1s. 9d.; Phoenix, large sprays, 10d. to 1s.; small sprays, 3d. to 8d.; Betty Spark, sprays 10d. to 1s. 2d. Prices of Ophelia and Madame Butterfly Roses ranged from 3s. 6d. to 4s. per dozen; Roselandia and Golden Ophelia made 2s. to 3s.; Richmond and Mrs. H. Stephens, 1s. to 2s.; Carnations realised 2s. 6d. to 3s. per dozen; Gladioli, 2s. to 3s.; Lily-of-the-Valley, 3s. to 3s. 6d. per bunch; Lilium longiflorum (Harrisii), 2s. 3d. to 3s. per dozen; L. lancifolium rubrum, 2s. to 2s. 6d.; Smilax, 1s. 6d. to 2s.; Asters and Calendula, 2d. to 4d.; Sweet Peas, 1d. to 3d.; and Asparagus foliage, 9d. to 1s.

A steady business was done in fruit, which included a large quantity of Plums. Scotch-grown Victoria Plums made 10d. to 1s. per lb.; English-grown, 10s. per sieve; Monarch was worth, 8s. 6d. to 10s. 6d.; Bush Plums, 7s. 6d. to 9s. 6d.; Magnum Bonum, 7s. to 9s.; Kent Damsons, 9s. to 10s. per sieve; and Worcester Damsons 11s. to 12s. Gravenstein Apples fetched 10s. to 14s. per case; York Imperial, 25s. to 28s. 6d. per barrel; and Lord Derby, 20s. to 25s. per cwt. Grape Fruit (Californian) realised 45s. to 47s. per case; Sunkist Oranges, 28s. to 31s. per case; South African Oranges, 16s. to 22s.; bronze Melons, 6s. to 10s. per case. Blackberries made 4½d. per lb.; Beurré Hardy Pears, Block, 15s. to 16s. half-case; Anderson's, 27s. to 29s. case: and Grapes, 15s. to 26s. per barrel.

In the vegetable section prices for Tomatos were firm at 7½d. to 8½d. per lb. French Beans made 4d. to 5d. Mushrooms, 3s. 3d.; Cauliflowers, 4s. to 5s. per dozen; Cucumbers, 2s. to 5s. per dozen; Lettuces, 1s. 9d. to 2s. 3d. Broad Beans, 1s. 6d. to 2s. per stone; and Rhubarb, 4s. 6d. per cwt.

TRADE NOTES.

The firm of Messrs. J. C. Wheeler and Son, Ltd., of Gloucester, went into voluntary liquidation in September, 1926, but has now been reconstituted under the same style and title, and has acquired from the original company the goodwill of the seed and nursery businesses, the stock in hand, and nursery grounds of about fifty acres at Barnwood.

An interesting sale takes place on October 5, 6 and 7, at the Sunningdale Nurseries, Windlesham, when a large number of choice Rhododendrons will be sold by auction by Messrs. Protheroe and Morris. Not only garden sorts, but Himalayan and Chinese species will be offered at this fifty-third sale in what was once known as Noble's Nurseries.

Messrs. A. G. Leighton, Ltd., seedsmen, of Newcastle, Staffordshire, have moved to Whitchurch, Shropshire, where they have new and up-to-date premises for the handling of their business, and sufficient ground for raising their special stocks of flower and other seeds.

GARDENING APPOINTMENTS.

Mr. W. Bradley, for the past two years and nine months gardener to Captain Savile, Ven House, Milborne Port, Somerset (tenant for the past nineteen years), as gardener to Sir Hubert Medlycott, Bart., the owner of the estate.

Mr. F. J. Maidment, for over nine years gardener to C. H. Turnor, Esq., Stoke Hall, Grantham, as gardener to A. S. Howarth, Esq., Whittington Hall, Kirkby Lonsdale, Westmoreland. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. C. E. Saunders, previously gardener to the Duke of Somerset, Maiden Bradley, Bath, as gardener to the Hon. Lord Hylton, Ammerdown Park, Radstock.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 52.5°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 28, 10 a.m. Bar. 30.3. Temp. 55°. Weather, Fine.

Soil Sterilization. It is a good many years now since it was shown that soil sterilization often leads to a large increase in yield. An example of the magnitude of the increase achieved by this means is provided by Mr. J. Harnett's experiments* with the soil in Tomato houses, and inasmuch as large-scale, comparative experiments are rarely made, it is desirable that they should have wide publicity. In Mr. Harnett's first experiment twelve houses were included. Previous to 1925, ten were sterilized by steam and two were not. The latter gave yields of twenty-nine tons of Tomatos per acre, whereas the former gave fifty-one tons. Toward the end of 1925 nine of the houses steamed the previous year were treated again in like manner. They again gave (in 1926) a yield of fifty tons per acre; but two houses sterilized by steam in the previous year were not so treated in 1925, and their yields dropped in 1926 to thirty-nine tons. The figure for the houses which had not been treated neither in 1925 nor in the previous years was twenty-nine tons. The result is, perhaps, surprising and certainly instructive. for it tends to show that even after one year's crop has been taken the soil, or rather the crop, benefits by a repetition of the sterilizing process. Another experiment is no less instructive. The crops (Tomatos) derived from eight houses had never exceeded thirty-five tons to the acre, although the soil of these houses had been liberally and judiciously manured. In the year in which the experiment was made, the soil of six of these houses was sterilized, and that of the other two was not; result, a fifty-ton crop from the sterilized against a thirty-two ton crop from the unsterilized.. Other experiments in which the relative merits of steam-heat and of an antiseptic, cresylic acid, were tested, give clear evidence in favour of the use of steam-heat as a means of sterilization. Although much and valuable work on the scientific aspects of soil sterilization has been done—particularly by Sir Henry Russell—there is still ample room for further investigation, The current view that the benefits of soil sterilization are due to a differential destruction of soil bacteria and also to a liberation of plant food may prove ultimately to be correct. It is, of course, probable that the effect of heat may also be due to a destruction of all manner of soil pests, which, if left in possession of the ground, would pester the plants and reduce their yields. Nevertheless, we are inclined to think that part at least of the beneficent action may be due to the liberation of substances which have a specific stimulatory effect on plant growth and development. In any case, the suggestion is worth investigating. That such substances exist there can be no doubt. The plant probably manages its own growth by means of such agents. To discover their existence outside the plant and to prove their powers would mark a notable advance in science, and might prove of real value in practice. That there are more things in soil-science than are writ down in our philosophy is certain. The *Twelfth Annual Report* already cited contains among much other valuable and suggestive experimental data an account of the decreasing yields which occur in glasshouse soils kept under continuous cultivation. No matter whether the soil was manured or not, continuous cultivation led to a marked decrease in yield, albeit, that, as is to be expected, the decrease was greater in the unmanured than in the manured soils. Fallowing such constantly cultivated soils results in a recovery, though why it should remains for science to determine.

National Sweet Pea Society. — The Annual General Meeting of the National Sweet Pea Society will be held in the R.H.S. Hall, Vincent Square, London, S.W., on Wednesday, October 19, 1927, commencing at 3 o'clock in the afternoon. The President, Mr. J. M. Bridgeford, will entertain the members to tea at the close of the meeting.

Sale of the Rosslyn Orchid Collection. — The seven days' sale of the late Mr. H. T. Pitt's Orchids at Rosslyn, 57, Stamford Hill, London, N.16, realised a total sum of £10,729. The sale was well attended and attracted purchasers from Belgium, France, Germany and America. The catalogue included 2,885 lots, all of which, with the exception of a few at the end, were Orchids. The gem of the collection was a splendid plant of Odontoglossum Purple Emperor, with three fine pseudo-bulbs, and this realised 340 guineas, whilst another plant of this beautiful Orchid fetched 310 guineas, and still another 250 guineas. One hundred guineas was obtained for a plant of Odontoglossum crispo-Solon, Pitt's variety, with five pseudo-bulbs, and 35 guineas for a smaller plant with two pseudo-bulbs, while another with three pseudo-bulbs sold for 36 guineas. Other big prices were Miltonia Lord Lambourne, 100 guineas; Odontioda Lady Veitch, 80 guineas; Odontoglossum Vivian, 56 guineas; Laelio-Cattleya Hassallii alba, Cowan's variety, 54 guineas; 54, 46 and 40 guineas respectively for three plants of Odontoglossum St. James; 44 guineas for Laelio-Cattleya Queen Mary var. Memoria Sir George Holford; the same amount for Odontioda Duchess of York; and 42 guineas for Cattleya Prince Shimadzu var. Springtide. Competition was remarkably keen throughout the sale, and the large number of seedling Orchids were eagerly bought up. The sale commenced at 12 o'clock each day; refreshments were served at about 1.30 p.m. each day, and tea later in the afternoon.

Land Drainage Problems.—The Royal Commission on Land Drainage has just returned from a highly instructive and interesting inspection of the Dutch systems of Drainage, which they have carried out at the invitation of the Netherlands Government. The Commissioners examined typical drainage areas and river outfalls, and saw the works of sea defence and land reclamation which are being carried out south of the Hague, and on the Zuyder Zee, respectively. The Dutch systems of drainage, rating and administration were explained to the Commissioners in lectures given by the Dutch experts, and practical examples were pointed out on the ground. Throughout their tour the Commissioners received every assistance from the Dutch authorities, whose unfailing courtesy afforded opportunities for the acquisition of most useful knowledge under ideal conditions. The Commissioners have arranged to hear evidence at the House of Lords from the Association of Municipal Corporations, the Urban District Councils' Association and the Cheshire County Council. The evidence of the officials of the Ministry of Agriculture will also then be concluded, and the Commissioners will forthwith proceed to consider the lines on which their report will be drafted.

The New Kelvin Hall, Glasgow.—The new Kelvin Hall at Glasgow, which is built upon the site of the former structure, destroyed by fire in 1925, will in all probability be used for the next horticultural exhibition, as it was formally opened by the King in July this year. It is a noble and dignified edifice, fit to take its place in the important group of buildings in the immediate vicinity, and of massive proportions. It comprises three parts, namely, the administrative block; the main, or exhibition hall, with its adjuncts comprising tea-room, platform, and reception room; and the store block, which includes the electricity sub-station on part of the lower ground floor. The area enclosed by the walls of the main hall is 171,000 square feet; for comparison it may be stated that the area of the Agricultural Hall, Islington, London, including the annexe and arcade, but excluding the gallery, is only 128,300 square feet. Three cupolas, forty feet wide and extending almost the whole length of the hall, give a remarkably uniform distribution of light over the whole area, and help to provide adequate means of ventilation. In addition, the fans which form part of the heating batteries can be used when required to cool the atmosphere. The building is fire-proof, and every facility and convenience, including ample means for carrying away waste water, have been provided for exhibitors.

Henry Eckford Memorial Fund.—This fund was established many years ago for the purpose of commemorating the late Mr. Henry Eckford, of Wem, Shropshire, who was the first to undertake the development of the Sweet Pea from the unpromising material then available. The fund has provided a gold Henry Eckford Memorial to someone who has done good work on behalf of Sweet Peas, but unless further donations are received it will not be possible for the trustees to award a medal annually each year. Thanks, however, to the efforts of Mr. F. T.

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* Experimental and Research Station, Nursery and Market Garden Industries Development Society, Ltd., Turner's Hill, Cheshunt, Herts. *Twelfth Annual Report*, 1926.

Wheler, the Chairman of the Committee of the National Sweet Pea Society, a handsome contribution was obtained from friends present at the luncheon on the occasion of the Society's show at Westminster. A further contribution was received on the occasion of the Sweet Pea Outing to Reading. A general appeal is now being made in the hope that by the date of the annual meeting of the N.S.P.S. (October 19) a further sum of £25 may be obtained, to enable the trustees to make an investment that will bring in sufficient to provide a gold Henry Eckford Memorial Medal every year and thus perpetuate for all time the memory of the Grand Old Man of the Sweet Pea world. Donations should be sent to Mr. C. H. Curtis (Convener of the Memorial Trustees), 5, Tavistock Street, Covent Garden, W.C.2.

Urea: a New Fertiliser.—Amongst the new nitrogenous fertilisers now being manufactured in Germany is a material known as Urea, which, owing to its high content of nitrogen—forty-six per cent.—is of importance, if only for the saving which is effected in its transport. Small quantities of this fertiliser have been imported into this country for experimental purposes, but its use has been handicapped by the fact that, up to recently, it has been subject to an import duty of 33⅓ per cent. *ad valorem* under the Safeguarding of Industries Act, 1921. The *Journal* of the Ministry of Agriculture states that steps are being taken which, it is hoped, will lead to the future manufacture of the material in this country; but, in the meantime, owing to an Order recently made by H.M. Treasury exempting it for a period—from June 27, 1927, to March 6, 1928—from the duty imposed by the Safeguarding of Industries Act, it is now possible to obtain supplies for use in this country at a cheaper rate than formerly.

Electrified Cardboard for Crops.—A patent has been taken out in Germany by a Berlin inventor named Alex Wendler for a kind of paste-board in which are inserted wires which, when connected with an ordinary current of electricity, become heated and diffuse warmth throughout the boards. These boards can be used for a variety of warming purposes, but horticulturists are chiefly interested in their possibilities as aids to the forcing of plants. Experiments have already been carried out, and have proved successful, in the use of boards as a protection from frost; they are arranged over the surface of the ground, the current is turned on at night, and the ground thus kept slightly warm. Whether their usefulness could be extended further if they were buried in the earth itself, being previously treated with tar to prevent rotting, to supply warmth to the actual roots of the crops, is a subject for further experiment. As regards price, it may be pointed out that most electricity undertakings are willing to supply current during the night (from 10 p.m. onwards) at a reduced rate. In Berlin, the night price works out at about five pfennigs per kilowatt hour; and in the Vienna State Nurseries, where experiments were carried out with Roses, it was calculated that, at a time when Roses were selling at 3d. to 5d. per bloom, the cost of the extra warmth which enabled the blooms to develop two to three weeks earlier than they would otherwise have done, worked out at less than a farthing each. The cost of the boards themselves is trifling, and a trial would be worth while, as they may be attached to any ordinary installation. In Berlin, the largest electrical works are taking a keen interest in the matter, and are eagerly assisting the growers in the vicinity of the city to make experiments with the Wendler boards. The well-known firm of L. Späth has made some interesting trials of the method, using the boards as protective material just above the surface of the ground, with very striking results.

"Kew Bulletin."—The current issue of the *Bulletin of Miscellaneous Information* (No. 7, 1927), issued from the Royal Botanic Gardens, Kew, contains a revision of the genera of Magnolieae, by Mr. J. E. Dandy, who adds four new genera, *i.e.*, Alcimandra, Pachylanax, Elmerrillia and Kmeria to those already recognised, *i.e.*, Talauma, Manglietia, Magnolia, Aromandendron and Michelia. Under "Notes on African Grasses," several new species are described, and these descriptions are followed by an enumeration of the Uganda species of Grasses by T. D. Maitland and C. E. Hubbard. The Orchid genera of Paphiopedilum and Phragmopedilum (certain groups of "Cypripediums") are discussed by Messrs. Sprague and Summerhayes; it appears that Rolfe's "Cordula" has preference over Paphiopedilum, but as the former title does not indicate the relationship of the genus with others of the Cypripedelinae, the proposal is made that Cordula be dropped. "Contributions to the Flora of Burma" and "Miscellaneous Notes" conclude the issue.

Mr. G. F. Gardiner.—The Superintendent of the Botanic Gardens, The University, Bristol—Mr G. F. Gardiner—commenced his gardening career at Pinewood, Witley, Surrey, the country seat of the late Lord Knutsford. After employment in the various departments of this garden for four years he, like many another young gardener, went to the Chelsea Nurseries of Messrs. James Veitch and Son. Within a few months of his entering the famous nursery he was appointed deputy-foreman of the New Holland Plant Department, which position he held until he entered Kew in 1910. During the greater part of his stay at Kew, Mr. Gardiner had charge of the propagating houses of the Decorative Department, where most of the plants are propagated to furnish the big conservatory (No. 4 House). He attended the various courses of lectures and gained—in his year—the highest number of marks for systematic botany. In addition to studying botany at Kew, Mr. Gardiner attended courses on this subject at the South Western Polytechnic, Chelsea; the Richmond and Chiswick Polytechnics; and at Chelsea Physic Gardens. In October, 1912, Professor O. V. Darbishire, the head of the Botany Department at the University of Bristol, invited Mr. Gardiner to take charge of, and remodel, the Botanic Gardens attached to the University. This invitation was accepted, and Mr. Gardiner has held the position of Garden Superintendent ever since, with great credit to the University and himself. During the war, Mr. Gardiner was stationed in the Straits of Gibraltar as hydrophone operator, in the R.N.V.R., and whilst there made several excursions to "The Rock," to study the flora and collect seeds of uncommon plants. After demobilisation, he returned to the University. The Bristol Botanic Gardens are maintained solely for the purpose of supplying material for use in the lecture rooms and laboratories, for which purpose a very large collection of greenhouse and hardy plants is cultivated. Mr. Gardiner lectures to the students on botanical gardening, and his duties include the collection and dispatch of seeds of a bewildering number of plants to the principal botanic gardens of the world.

MR. G. F. GARDINER.

Twenty-five Years of the Belgian Horticultural Federation.—Our Belgian contemporary, *La Tribune Horticole*, the organ of the Fédération des Sociétés Horticoles de Belgique, appeared in an enlarged form and on art paper on September 3, to celebrate the twenty-fifth anniversary of the foundation of the Federation. The Federation originally grew out of the Royal Horticultural Society of Huy, which was domiciled at Statte. This Society was one of the largest and most influential in Belgium, and still remains so; but its influence at the beginning of the present century was less than it should have been on account of the fact that its activities were purely local, and that no bond existed to connect it with the other Societies which worked in isolation all over the country. The disadvantages which arose from this isolation were fully realised by the Huy Society, and negotiations were opened up with the other societies with a view to forming a working association. A congress was held at Huy, at the office of the Society which had taken the initiative, on June 8 and 9, 1902. The delegates were formally welcomed at the Town Hall, and the Director-General of Agriculture, who was present, made a speech of welcome, after which he acted as President. An excellent spirit of agreement was displayed, and a resolution was passed with acclamation, forming the Federation of Horticultural Societies of Belgium, after which forty societies then and there declared their adhesion, many others doing so after reporting and consulting their local officials. The Constituent Assembly was held in Brussels on December 28, 1902, at which date 124 societies were affiliated. The late Count Oswald de Kerchove de Denterghem was asked to become the President of the newly constituted Federation, as it was felt that this would bring into line the Societies of Ghent and Brussels, which still held aloof. He did not, however, accept this invitation, fearing that his action might be misunderstood in certain quarters, and the question of the presidency was in abeyance until 1908, when the Count 't Kint de Roodenbeke was nominated President of Honor, and Baron Eugene de Kerchove d'Exaerde President effective. The first Secretary was M. Ch. Gonthier, of whom there is a good portrait (Pl. 465), and the first Treasurer, the Count de Villers. At first, the newly-born Federation suffered greatly for want of capital, and repeated applications to the Government for subsidies for this eminently useful and serviceable work were only poorly responded to. However, with the aid of generous donations from the affiliated societies, it gradually made its influence felt, and took its proper place among the horticultural institutions of the country, succeeding at last in its great object, the foundation of a separate department of State for horticulture alone—the "Office Horticole," now presided over by M. Hector van Orshoven, which has done so much for Belgian horticulture. Towards 1908, the office of the Federation was removed to Brussels, as it was found increasingly inconvenient to have the headquarters in a distant provincial town, when so much of the business had perforce to be done in the capital. Since then, with the exception of the war period, when its activities were necessarily restricted, the Federation has steadily grown in influence and usefulness, and can look back with unmixed pride on the record of its twenty-five years of existence.

Sweet Pea Essay Competition.—An essay competition has been arranged for members of the National Sweet Pea Society. The General Committee offers three prizes—first, £2 10s., second £1 10s., third, £1—for the three best essays on "My Sweet Pea Problems and Pleasures." The three prize essays will be published in the *Sweet Pea Annual* for 1928, and the Committee reserves the right to publish any of the others, wholly or in part, in future issues of the *Annual*. Essays must reach the

Secretary at 19, Bedford Chambers, Covent Garden, London, W.C.2, not later than Wednesday, October, 19, 1927, and will be subject to the following conditions.—(1) Only members of the National Sweet Pea Society may compete; (2) Essays to consist of not fewer than 1,500 words nor more than 2,000 words in length, and be written or typed on one side only of the paper; (3) Essays must be signed with a nom-de-plume only and must reach the Secretary not later than October 19, 1927; (4) Envelopes must be marked "Essay" on the left-hand top corner and must contain a smaller, sealed envelope enclosing the nom-de-plume, name and address of the competitor (these smaller envelopes will be opened by the judges after the awards have been made); (5) All essays submitted will become the property of the National Sweet Pea Society.

The Melchet Court Vine.—There is a wonderful old vine of the Black Hamburgh Grape in Sir Alfred Mond's garden at Melchet Court, Romsey, Hampshire (Fig. 118). It has a trunk with a circumference of three feet three inches, and carries no fewer than eighty-six fruiting rods. The crop this season consists of over 650 bunches of excellent quality, several of them weighing over 4 lbs. each. We are indebted to Mr. W. Petty, gardener at Melchet Court, for the photograph from which the illustration is reproduced.

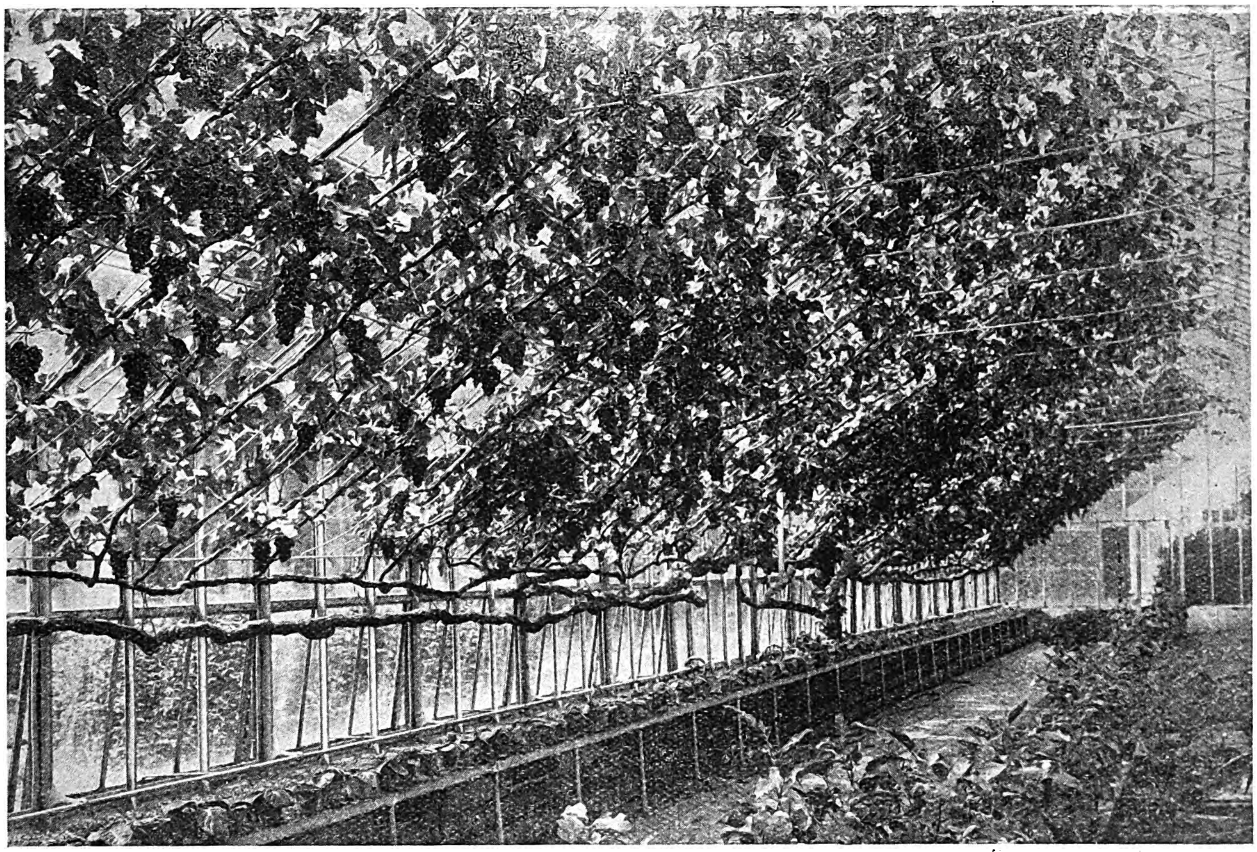

FIG. 118.—THE OLD BLACK HAMBURGH VINE AT MELCHET COURT, ROMSEY.

Sweet Peas for Garden Decoration.—The Floral Committee of the National Sweet Pea Society recommends the following twenty-four varieties of Sweet Peas as suitable for general garden cultivation:—Black Bess, blue-black; Bluebird, blue; Bonfire, bicolor; Charity, crimson; Charming, deep cerise; Delightful, pale cerise; Elegance, blush-lilac; Grenadier, scarlet-cerise; Ivory Picture, ivory; Joan Ryder, white; King Mauve, mauve; Magnet, deep cream-pink; Matchless, cream; Miss California, deep cream-pink; Mrs. Arnold Hitchcook, pale cream-pink; Olympia, purple; Picture, cream-pink; Powerscourt, lilac lavender; Sunset, rose; Supreme, pale pink; Warrior, maroon; Wembley, pale lavender; Youth, picotee-edged; and 2 LO., scarlet-cerise.

Appointments for The Ensuing Week.—SUNDAY, OCTOBER 2: Wakefield and North of England Tulip Society's meeting. MONDAY, OCTOBER 3: Romsey Gardeners' Association's meeting. TUESDAY, OCTOBER 4: Bolton Horticultural Society's lecture; Royal Caledonian Horticultural Society's meeting. WEDNESDAY, OCTOBER 5: Nottingham and Notts. Chrysanthemum Society's meeting. FRIDAY, OCTOBER 7: Accrington and District Chrysanthemum Society's meeting; Dundee Horticultural Society's lecture; Manchester and North of England Orchid Society's meeting. SATURDAY, OCTOBER 8: British Mycological Society's autumn foray at Oxshott for London Students; Peebles Chrysanthemum show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*American Aloe in Bloom.*—There is now in flower at the White House, Colebrookdale, Salop (the seat of Mrs. Darby), a specimen of the Agave americana, or American Aloe, supposed to be above one hundred years old. The plant has thrown up two flowering stems, the largest sixteen feet, and the smaller one thirteen feet high. The larger stem has twenty-four branches, comprising from thirteen to 152 flowers on each; the smaller stem has eighteen branches, comprising from eleven to sixty-one flowers on each branch. As, from the great rarity of the flowering of the plant in this country, few have an opportunity of comparing one specimen with another, the following account, taken from Thornton's "Botany" (a book not accessible to everyone), may assist in forming some idea of the present plant. After mentioning that the Aloe was brought from South America into Spain, he states, that one is represented to have flowered at Lambeth, in 1690, and two other plants in 1714, at Hampton Court Palace; and that the one from which the representation given by him was taken, flowered in September, 1790, at Smith's Nursery, at Dalston, near Hackney. This plant was then supposed to be about seventy years old, "at which time it displayed its 'scape,' or trunk, arising from the centre of the leaves, increasing with astonishing rapidity, until it reached nearly the height of thirty feet; resembling the mast of a ship, and there projected from its summit at proportionate distances thirteen great branches, at each of whose extremities were found from eighty to one hundred flowers, on proper peduncles or flower stalks of different lengths; that each flower might have its due position as to light and heat, exciting in the beholder the idea of a vast chandelier." It will be observed that the plant described by Thornton, though nearly twice the height of the one at Colebrookdale (which, by-the-bye, is said to be the first recorded to have flowered in Shropshire), has fewer branches; and although the average number of flowers on each branch is greater, the total on all the branches is considerably less, the plant at Colebrookdale having on its main stem twenty-four branches, comprising 1515 flowers, and on its second stem eighteen branches, comprising 639 flowers; altogether forty-two branches, comprising 2,154 flowers. It is a curious coincidence (but nothing more) that the two stems together are about the height of the one described by Thornton. The gardener, with the permission of his employer, will have much pleasure in gratifying the curiosity of anyone who may be pleased to visit this "wonder of nature," in the course of the ensuing month. *W. G., Gard. Chron., October 2, 1852.*

Publications Received.—*Common British Wild Flowers Easily Named,* by T. Ernest Waltham; price 3/6 net.—*The Gold Coast Forest: A Study in Synecology,* by T. F. Chipp; Oxford Forestry Memoirs, No. 7, 1927; both published by the Oxford University Press, Falcon Square, E.C.—*The Structure and Development of the Fungi,* by H. C. I. Gwynne-Vaughan and B. Barnes; Cambridge University Press, Fetter Lane, E.C.4; price 15/- net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Oncidium.—The members of this genus are usually represented in collections by plants in flower at all seasons. One very pretty, free-flowering species now in flower is O. obryzatum, its long and much-branched spikes carrying large quantities of pretty, golden-yellow flowers that are spotted light brown. The plants belonging to the O. crispum section, namely, O. Forbesii, O. curtum, O. Gardneri, O. Marshallianum and O. crispum itself, are most useful for supplying a display of bright flowers. O. Marshallianum, one of the most beautiful species, flowers during the late spring and early summer, whilst the others develop their beautiful and graceful flowering sprays during late summer and autumn. O. varicosum is one of the most beautiful and free-flowering Orchids in cultivation, and in the past has been grown in larger quantities than any other member of the genus. At the present time it is producing flower spikes which will be appreciated for shooting parties and other functions at a later date. The plants should be well exposed to the light in their growing quarters, and the spikes should be secured to neat stakes to prevent accidents. O. ornithorhynchum and its beautiful white variety album, with others that have been growing during the summer in the cool house, will be better wintered in a cool position in the intermediate house and watered according to their state of growth. There are many other Oncidiums, all of which are worthy of extended cultivation, especially where cut flowers are in demand. Unfortunately, there is a difficulty of obtaining some of the freest-flowering and easily cultivated varieties in quantity. After flowering, the plants should be rested, as these Orchids delight in a long, decided rest, but not the species which require fire-heat, or a moderate temperature; in no case should they be allowed to shrivel for the want of water.

Repotting.—Sometimes the cultivator has to decide between two evils, namely, repotting a plant at an unsuitable time, or allowing it to deteriorate in decomposed material. My advice in such cases is to repot, as no Orchid can succeed in such material, and more Orchids decline in health and vigour from this cause than any other. Some little discretion is necessary in the application of water to the roots of any plants repotted out of its normal season. The plants should be placed in the smallest receptacles that will accommodate them, and only sufficient material placed around them to hold them in position.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Carrots.—Maincrop Carrots that are fully grown should be lifted. The roots should be dug up carefully with a fork and laid in the sun for a short time before storing them. Cut off the foliage to about two inches or a little more from the crown, according to the nature of the variety, but by no means cut too closely to the crown or decay may set in. The roots should be placed in clamps or bins in a stove, with the crowns all showing outwards, and arranged in layers between sand or very old, sifted ashes. Carrots raised from seeds sown during early July are forming nice roots, and they should be thinned carefully for use as required.

Spring-sown Maincrop Onions.—Owing to the abnormally wet season, the bulbs of these Onions have in many instances larger necks than usual; such bulbs should be kept by themselves and used first. If not already done, the tops of all maincrop varieties should now be bent over carefully in order to assist the ripening of the bulbs, and so soon as they are ready the latter should be pulled up and laid out thinly in the sun to ripen, turning them frequently. A better plan than to ripen them on the ground is to fix small-meshed wire-netting to wooden supports and place them on these, so that the air can circulate freely about them. If frames or airy glasshouses are available the Onions may be ripened in these. In any case, the bulbs should be well-ripened before they are stored.

Potatos—Where the tubers have not yet been lifted they should be harvested without further delay. Disease is reported from all parts of the country, and special care should be exercised when gathering the tubers that only sound ones are stored. I would advise, where outside clamps are made, that a high and dry position be selected and extra means provided for ventilation. I again emphasize the use of a light sprinkling of lime when storing Potatos. It will be wise to examine the tubers already in store to make certain that they are sound, as we have found many which appeared perfectly sound when lifted showing signs of disease. To those fortunate enough to have plenty of shed room, I advise that as many Potatos as possible be stored therein, as it will be easy to make an examination of them during wet days, when outside work is impossible.

Celery.—About this time the earliest supplies of Celery are ready for use. Continue to blanch the later plants, either by enclosing the stems in paper or earthing them up; do not cover the tops of the hearts, or decay will follow quickly. Keep the crop free from pests; often in warm autumns this is very necessary. In earthing up use plenty of soot and lime as deterrents to insect pests.

Celeriac.—This vegetable is growing freely, and it will be wise to remove a few of the useless leaves from the crowns; at the same time, draw away a small portion of the soil from the roots. During showery weather a light sprinkling of guano between the plants, and well-hoed-in, will prove very beneficial in assisting the plants to make big roots.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Strawberries.—Plants which were potted in July have filled their pots with roots, and a little weak liquid manure may be given them twice a week. Keep these plants out in the open; stand them well clear of each other, keep the pots free of weeds, pick off all runners as they appear and reduce the crowns to one. The weather has not been favourable to the ripening of the crowns and should it continue wet and dull, elevate the pots in order to expose the crowns as fully to the air and light as possible. The plants of later batches will have more time to develop and ripen their crowns in a more natural manner.

Melons.—These plants will require most careful treatment in watering the roots and promoting a suitable amount of atmospheric moisture. Plants carrying late fruits, now in various stages of growth, may be fed fairly liberally until the Melons have attained full size, when clear water only should be given in moderate quantity. Discontinue overhead syringing, as the moisture arising from the surface of the bed, floors and walls that have been damped will be found ample. Under this treatment the fruits will not exceed normal size, but will be sound, deep in the flesh, and of good average quality. A moderate supply of air should be admitted on fine mornings and gradually increased as the day temperature rises, when gentle warmth in the water-pipes will dry up superfluous moisture. The hot-beds on which later plants are growing should have fresh fermenting materials applied as linings so that the requisite temperature may be maintained. These plants will require still less water and moisture than those growing over hot-air chambers. Expose the fruits fully to the sun and light, and cover the frames with mats at night, removing them first thing in the morning.

Vines.—Endeavour to ripen all late Grapes before damp, dull weather sets in. If necessary, give the roots a good watering and mulch them with dry material to retain the moisture in the soil. Gros Colman usually requires a long season, and when premature shrivelling of the foliage takes place it is well to allow a moderate amount of growth to develop. Owing to the dull, sunless summer, young vines will require a little fire-heat and plenty of fresh air to mature the wood thoroughly. Notwithstanding the excessive amount of rain, Grapes have coloured well and the berries are large. Remove all lateral growths and allow warm air to circulate freely amongst the vines. Pot vines having perfected their growth and shed their leaves, should be pruned so soon as they are ready and stood in a cool, airy position for forcing. Materials required for making fresh borders during the coming winter should be procured whilst the conditions are favourable.

Plums Coe's Golden Drop.—If the fruits are still hanging, the roots should be kept extra dry and the plants grown in an even temperature, ranging from 40° to 50°. If these conditions cannot be maintained the fruits had better be gathered, as when thoroughly ripened they will keep for some time in a dry room, provided they are carefully folded in silver paper. When the trees are cleared of the crop, moisten their roots prior to repotting the trees. Pots fourteen inches in diameter are large enough. Compost containing bones and concentrated fertilisers are best mixed before they are wanted. After potting them, the trees need not be kept in the house but stood in the open.

Figs.—The fruits having been harvested, trees in pots, tubs, or borders, should be rested. If the autumn is fine and dry, the pot trees may remain out in a sheltered position until the house or pit is ready for them. Pot Fig trees are subject to infestations of spider and scale insects and should be washed carefully with Gishurst Compound. The walls of the house in which they have been grown should be well cleansed with quick-lime and sulphur. Sudden and severe autumn frosts are harmful to the trees, therefore the houses in which they will be wintered should be got ready for their reception. Pot trees may be obtained from nurserymen, and under good management improve with age. When the trees have been started into growth, the ball of roots, no matter how large, should never be allowed to become dry until all the fruits are gathered.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Euphorbia jacquiniaeflora. — Where these plants have been grown in frames under cool conditions, they should be removed to a warmer house, for if allowed to remain too long in frames there is a possibility of some of the bottom leaves dropping. The plants should be arranged so that the full beauty of the long, arching growths of flowers may be appreciated, also the plants should, if possible, be stood facing the sun. Great care is needed in watering them; no stimulants of any description should be given until the pots are well-filled with roots, and even then it should be given in moderation. The same conditions apply to Euphorbia pulcherrima, better known in gardens as Poinsettia, but the latter should not be grown in a high temperature, otherwise the plants will become too tall; they are equally effective, whether they are two feet or six feet high, and it is simply a matter of growing them to suit requirements.

Humea elegans.—The plants should be shifted into fifty-four-sized pots and they will then be well established in the new compost before the short days of winter. These plants require careful treatment at all times, especially after they are transferred to larger receptacles. The plants should be absolutely in need of moisture before water is given them, then soak the soil thoroughly. Grow the plants under the coolest conditions, near the roof-glass in a cool house, for any attempt to hasten the growth of this plant generally ends in failure.

Climbing Plants.— Climbers growing close to the roof-glass in the conservatory or greenhouse need attention at this time of the year to allow more light to reach the plants beneath them. Bougainvilleas may be cut fairly hard back when they have passed out of flower; other subjects, such as Cobaea, Passiflora and Tacsonia may be thinned severely. The present is an excellent time to wash the glass inside and out, and any blinds that have been used for shading may be taken down and stored in a dry place free from rats and mice.

Herbaceous Calceolarias.—It is advisable to establish these plants in their flowering pots during the present month. Use a light, rich, open compost, and see that the receptacles are well-drained. Care is needed not to pot too deeply; in fact, the old ball should not be covered with the new soil or the plant will be liable to rot off near the base. Grow the plants in the coolest possible conditions, just excluding frost from them, but prevent cold draughts reaching them and admit air only on the leeward side of the house. It is advisable to spray the plants occasionally with an insecticide to ward off attacks of aphis.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Planting Roses.—One of the most important details in the successful cultivation of Roses is early planting, and whenever possible they should be planted early in November. The beds should be prepared now to allow time for the soil to settle before the planting season arrives. Roses demand high cultivation, and the ground for them should be trenched at least from two-and-a-half feet to three feet in depth, as a deep root-run is essential. Heavy, wet land may require draining and the texture of the soil lightened by the addition of gritty material. On heavy soils stable manure should be used in preference to cow dung, the latter being best for light soils. When preparing the beds a dressing of bone-meal should be added and lime or basic slag forked into the surface, applying the slag at the rate of six to eight ounces per square yard. In certain conditions it may be necessary to remove the soil entirely and substitute good loam. Poor, light soils may be improved by removing a proportion of the subsoil and substituting good loam. Most failures in the cultivation of Roses are usually due to poor cultivation; it therefore pays to prepare the beds thoroughly in the beginning. Orders for new Roses should be placed early and thus ensure them being delivered in good time. Much depends on a selection of suitable varieties, and it is always best to see the plants growing in the nursery, as varieties that may attract on the show benches may prove to be poor growers. Before planting any untried variety in quantity, it is wise to test it for a season at least to prove its value for one's particular purpose and garden.

Border Carnations.—Shoots that were layered at the proper time should now be well rooted, and they should be planted in their flowering quarters as early in October as possible. Carnations planted early in autumn do much better than when they are potted and wintered in frames to be put out in spring, although in very damp, low-lying situations wintering them under glass may be necessary. The beds should be well dug and the soil enriched with well rotted manure; before planting, a sprinkling of lime should be forked into the surface. In wet situations the beds or borders should be raised somewhat above the general level. Plant when the ground is in good working condition as the soil should be trodden fairly firmly. Carnations should be handled carefully when planting them as the "tongue" with the attached roots is very easily broken off. It is wise to place some of the plants in a sheltered position, or transfer them to pots, in case of any failing during the winter.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD, Wrotham Park, Barnet, Middlesex.

Raspberry Beds.—If not already done, cut out all the old fruiting canes to admit light and air to the young canes that are to yield next season's crop. Reduce the number of the young growths leaving only sufficient to furnish the trellises at a reasonable distance apart. If planted in rows, a distance of six inches or eight inches apart will be suitable. Fasten the canes loosely to the wires with soft tar yarn and little if any further attention will be required, beyond keeping the plantation clean.

Pears.—Examine the trees and gather the largest and most forward fruits, which should be placed in a fruit room to complete their ripening. If it is desired to hasten their ripening, place them in boxes in a warm greenhouse or vinery. Do not gather late varieties for the present as these are best left on the trees to mature. Nouvelle Fulvie, Glou Morceau, Josephine de Malines, Beurré Perran, Le Lectier and Ne Plus Meuris are all good late varieties of Pears.

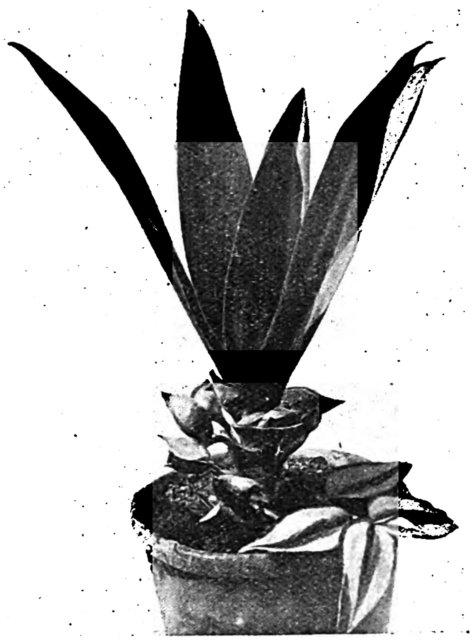

FIG. 119.—RHOEO DISCOLOR.

(see p. 264).

Nuts.—The crop of nuts was very promising early in the season, but of late a large number of the nuts have fallen from the bushes without kernels. Most nut trees developed plenty of female blooms and large quantities of catkins, but late frosts destroyed most of the catkins, and this may be the cause of the loss. Keep a watchful eye on those left, for rats and mice, if not checked, will carry away large quantities of the nuts in a few nights. Nuts may be planted where other fruits would fail. Kentish Filbert and Prolific Filbert are two early and dependable varieties. Kentish Cob and Webb's Prize Cob are much grown in some parts of the country.

Loganberry.—This useful fruit requires but little care and attention when once established, for its cultivation is very simple. So soon as the fruits have been gathered, cut out all the old fruiting shoots and train the young growths in their places. If the soil is in good heart and the young growths robust, little if any feeding will be needed, but on poor, light land, heavy mulchings and liberal feeding will greatly assist the plants. The Loganberry may be grown in a variety of positions and may be used to cover old walls, or it may be trained on trellises or poles.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Propagating Shrubs. — After the various bedding plants have been propagated, many kinds of hardy and half-hardy shrubs may be readily increased in a like manner, and when cuttings of these are available they should be inserted in spare frames prepared as advised for the reception of the other cuttings. To name all the varieties which may be thus increased would make a long list; among others Veronica, Escallonia, Tricuspidaria, Choisya, Olearia, Fuchsia, and Myrtus may be propagated successfully at this time, and under favourable conditions the plants will be ready to remove to a nursery border early in spring. Shade and moisture are essential for the success of these more or less hard-wooded subjects, and they should never be allowed to wilt for want of moisture. Where only a few plants of each are required the cuttings may be inserted along the bottom side of the frames containing the bedding subjects, that is, in the part shaded by the front of the frames, where, as a rule, other things do not do so well. It will be found that they will root with greater freedom than in a lighter position. The method of striking a few cuttings in pots of sandy soil, and plunging the pots to their rims in any moisture-retaining material is also a good plan, as when treated in this way, they are easily removed to other quarters should the necessity arise, without actually disturbing the young, partially-rooted plants.

Michaelmas Daisies.—These beautiful autumn flowers are making the borders gay, and where the number of shoots was reduced and the plants staked to prevent them becoming twisted or bent down, in good time, the reward of the labour involved is now apparent. The dwarfer forms, such as A. Amellus and its numerous varieties, do not require so much attention in this way, and, together with the graceful A. ericoides, are usefully employed in the front of the taller varieties. These two types of the plants, however, do not increase so rapidly as many others; and where it is desired to have more of them, one or two old plants should be lifted so soon as they have finished flowering, cut over six inches above the ground, and carefully pulled to pieces, leaving at least one of the old flowering stems to each piece. These divided portions should be planted about four inches apart in good soil in a frame. They will form useful specimens next season, and if planted in clumps of seven or more, will provide quantities of cut flowers, as well as keep the front of the borders well furnished at a time when flowers are getting scarce.

MESEMBRYANTHEMUM.

(*Continued from p.* 228.)

FENESTRARIA, N. E. BR.

As the two species of this genus can scarcely be distinguished by their leaves, and as they have now both flowered in Europe, the following brief descriptions of their flowers may be useful for discriminating them until more complete descriptions can be given at a later date.

F. aurantiaca, N. E. Br.—Corolla 2½–3 inches in diameter; petals about 50, in one series, 12-15 lines long, and 1 line broad, obtuse, of a somewhat orange-yellow with a pinkish tinge on the back; shining. Stigmas very plumose, white.

This beautiful species is the type of the genus.

F. rhopalophylla N. E. Br.—Corolla 1½–1¾ inch in diameter; petals about 35, in one series, 8-9 lines long, ¾–1 line broad, obtusely pointed, white. Stigmas filiform, acute, not plumose, pale yellowish-green.—Mesembryanthemum rhopalophyllum, Schlecht and Diels in Schultze, *Aus Namaland und Kalahari* p. 83, with fig. and p. 692; Marloth, *Flora of South Africa*, Vol. I, p. 207, t. 52.

Both species are natives of Namaqualand.

N. E. Brown.

(*To be continued*).

INDOOR PLANTS.

RHOEO DISCOLOR.

At one time this plant was popularly known as Tradescantia discolor, but it has since been placed in a separate genus, of which it is probably the only species in cultivation.

The illustration reproduced in Fig. 119, on p. 263, clearly portrays the upright habit of the plant, in striking contrast to that of Tradescantia. A shoot of the well-known garden plant, T. zebrina variegata (Zebrina pendula of botanists) has been placed on the pot for comparison. The texture and colouring of R. discolor is identical with that of the Tradescantia, the upper surface of the leaves being of a bright, glossy green, whilst the undersides are deep purple. The leaves are about one foot in length and two inches in diameter, and as both surfaces are exposed to view, the plant is very conspicuous and decorative.

The inflorescence is composed of small, white blossoms which are inconspicuous, but the two large bracts which surround them are very attractive in shape and colouring. These two bright purple bracts are so formed that they overlap and form a large, boat-shaped structure, about an inch deep and an inch-and-a-half in length.

Being a native of Brazil, R. discolor requires the shelter of a warm greenhouse, otherwise its cultural requirements are simple, a compost of three parts loam, one part leaf-mould, and a sprinkling of sand, being quite adequate.

Propagation is easily effected by means of seeds, while suckers may be detached from the base and rooted in sandy soil, in a warm propagating case, with perfect ease.

[A fine illustration of R. discolor, showing the purple colour of the lower leaf-surface, will be found in *Bot. Mag.*, t. 1192, where it is described as Tradescantia discolor "brought from the countries bordering the Gulf of Mexico to Jamaica, whence it has been imported into this country. Requires to be kept in a stove. Propagates abundantly, both by offsets and seed. Of easy culture. Our drawing was made from a plant that bloomed last February in Mr. Vere's hothouse at Kensington Gore." The date on the *Bot. Mag.* plate is May 1, 1809.—Eds.]

ERYTHRINA CRISTA-GALLI.

Although this species was introduced more than three hundred years ago, it is by no means common, albeit most botanical gardens have it in their collections. The Latin name of the genus is derived from *erythros*, red, in reference to the flowers, which are of a vivid scarlet colour. These large, Pea-shaped blossoms—the plant belongs to the Leguminosae—are produced in June on immense racemes at the ends of stout, prickly stems that rise from four to six feet.

In the south of England the Coral Tree may be grown entirely out of doors, provided it is planted in a well-drained position, such as under the shelter of a wall with a south aspect. There used to be a fine specimen of this plant growing at the base of a greenhouse wall in the Chelsea Nursery of Messrs. James Veitch and Sons. It was apparently growing in the gravel path, where it made remarkable growth and blossomed profusely each year. Nothing was ever done to it, with the exception of giving it an annual pruning, which consisted in cutting back the old flowering stems, close to the ground. It was not protected in any way, even in the depth of the winter, which proves, that given the right conditions, it may be classed as a hardy plant, although its native habitat is Brazil.

As a pot plant for a large conservatory, Erythrina Crista-galli is very useful, because it responds readily to artificial heat, and may be made to bloom in the early spring, with a very little trouble. Plants for forcing should be potted in November and the shoots pruned back close to the base. Forcing should, of course, be accomplished by gradual stages, and great care should be taken to keep the foliage free from red spider by frequently syringing it. Under this treatment it may be flowered freely in March, when its brilliant blossoms are much appreciated.

This species is, fortunately, easy to propagate, so that a stock of plants may be acquired quickly. Young shoots, about three inches in length, root readily in sandy soil, if placed in a propagator with a bottom heat under a bell jar. *G. F. Gardiner, Botanic Gardens, University of Bristol.*

ORCHID NOTES AND GLEANINGS.

LEPTOTES BICOLOR.

This pretty little Orchid should be grown in shallow pans or in small, teak-wood baskets, and suspended from the rafters of the intermediate house; A.1 fibre and a little Sphagnum-moss will provide a satisfactory rooting-medium.

L. bicolor—sometimes referred to Tetramicra bicolor—was introduced from the Organ Mountains by Mrs. Arnold Harrison, of Liverpool, in 1831 or 1832; the first plant to bloom in this country, however, was collected by Gardner in the the same region and sent to Woburn, where it flowered in 1839.

The rhizome is creeping, and from it develop several terete stems, one inch to one-and-a-half inch long; the leaves are fleshy, recurved and grooved on the upper side; deep green, sometimes suffused or spotted with dull purple. The peduncles appear from the bases of the leaves and are two to four-flowered; the sepals and petals are white; the lip is shorter than the other segments, oval-oblong, with two auricles; purple, sometimes tipped white.

This small, neat and very pretty plant produces its flowers in winter; I have known it grow admirably in a cool house, placed at the warmer end. This Orchid requires a liberal supply of water in the growing season. *Ralph E. Arnold.*

TREES AND SHRUBS.

GAULTHERIA NUMMULARIOIDES.

This is one of the most charming members of the genus, and a shrub of such remarkable distinction that it is not likely to be confused with any other. It does well with me on a cool and shady woodland slope set with sunken stones, the soil being light and gritty, but intermixed with a little leaf-mould at planting time. Half-a-dozen plants put into this bank a few years ago have now covered the whole space, running beneath the stones, and sending up graceful tufts of the long, drooping branches, which are closely set with almost round, opposite leaves. The latter, growing smaller towards the tips, give the Fern-like foliage a finely-tapered appearance. The leaves are leathery in texture, and an attractive moss-green; the bristles which clothe their margins and undersides as well as the branches give the plant a rusty-brown hue.

The pink, bell-shaped flowers are produced freely under the leaf axils during the late summer, but none of these have ever yet set fruits, and it would be interesting to know whether other growers of this choice Gaultheria have been successful in fruiting it.

Though a native of the Himalayas, G. nummularioides has never suffered injury from frost here, and 15° are not infrequent. Judging from my experience, there seems no doubt but that this Gaultheria delights in just such spots as those in which hardy Ferns prosper.

RUBUS IRENAEUS.

I have grown this Rubus for some years as a ground covering under trees in a woodland garden and it has given every satisfaction. A native of western and central China, where it grows in forests at considerable elevations (up to 8,000 feet), R. irenaeus was introduced by Mr. E. H. Wilson for Messrs. J. Veitch and Sons in 1900. It is a quite prostrate, trailing species, the well-rounded leaves, some six inches across being a rich, burnished green, and much like those of Galax aphylla in their colour and gloss. The underparts of these leaves, which stand well up on five-inch to six-inch stalks, are slightly tinted with a yellowish-brown felt, but I find that this is all but absent when the plant is in full shade. The flowers, which are white and cup-shaped, are borne in clusters from the leaf axils during the later summer, but these have not yet ripened fruit in this garden. R. irenaeus is a rapid trailer and, being evergreen, it always looks well in woodland undergrowth. The stems are armed with a few, small decurved prickles. *A. T. J.*

PLAGIANTHUS BETULINUS.

Without any pretensions to the fine qualities of P. Lyallii, this species is a very interesting shrub or small tree, and is worthy of a place in every good garden.

It is a tall-growing species, very like a Birch in foliage and growth. It makes a choice and conspicuous tree for a sheltered situation.

The flowers are small, on slender pedicels, but here, in Gloucestershire, the plant flowers but rarely; the panicles are terminal, branched, many-flowered and produced in summer.

The leaves of young plants are small, about half-an-inch long, rounded-ovate, crenate and lobed. In a full grown specimen, the leaves are about two inches long, ovate, acuminate, rounded at the base and coarsely serrate.

In its native place, P. betulinus will reach a height of from forty feet to seventy feet; it was introduced from New Zealand in 1870, and is still somewhat rare in gardens.

The shelter of a wall is advisable, and in a large border of choice shrubs in such a position a plant of this Plagianthus is a fine feature, its foliage alone being a striking foil to more colourful subjects. *Ralph E. Arnold, Campden, Gloucestershire.*

ALPINE GARDEN.

SCUTELLARIA ALPINA.

Scutellaria alpina is but seldom seen in gardens nowadays, yet some forty years or so ago, it was more popular. The species is a native of Switzerland and common by the waysides near Mount Cenis. S. alpina is of a trailing habit and only grows a few inches above the soil. It bears whorls of violet and white blooms, the white of the lips contrasting pleasingly with the violet of the hoods.

This alpine Skullcap is a wonderfully accommodating plant in the garden, but it needs a sunny place and a rather light, warm soil. It may be raised from seeds or increased by cuttings or division.

ERODIUM MACRADENUM.

The genus Erodium presents us with so many charming plants for the rock garden that it is exceedingly difficult to select one for notice without seeming to do injustice to the other species. Nothing of this kind is intended in referring to Erodium macradenum, which is chosen for notice, not as the most delightful of the genus—for one would not hazard such a statement—but simply as one of a beautiful race which may well be included in any rock garden. It is one of the best of our rock plants, and deserves a good place in loam, leaf-soil and peat, and a sunny position. It is only from four inches to six inches high, and forms an exceedingly pretty tuft of green foliage—not downy, as that of most other species. This foliage is cut in a charming way and adds greatly to the charm of the pink flowers.

Each of the two upper petals, which are smaller that the lower, has a black blotch which gives a distinction to the blooms and an additional grace to the general effect. This Pyrenean Heron's Bill is quite hardy under reasonable conditions, and is entirely worthy of one of the best positions in the rock garden or small rockery. It is increased by means of seeds or cuttings. It prefers lime, though this is not essential.

STACHYS CORSICA.

STACHYS corsica is one of the most delightful of rock garden plants. It forms a close carpet of small, shining green leaves, which all the summer through is almost covered with little flowers. The blossoms open white, then pass to blush. It is a delightful carpeter for choice early bulbs, such as rare Snowdrops, and is never obtrusive. Although it spreads freely in light, well-drained soil. it is not rampant like so many other creeping plants, and is easily kept within bounds.

S. corsica is, generally speaking, hardy. Mr. Reginald Farrer stated that it was "faithfully" hardy, but I am sorry to confess that I almost lost it one wet winter, although it was in an exceptionally dry and well-drained position. The combinations of weather that season were no doubt, exceptionally trying, but in a climate such as this with a heavy early winter rainfall, I think it should be protected by a sheet of glass. I prefer to plant either very early in autumn or in spring, and find that the plant does best on a sunny part of the rock garden or almost on the level. S. corsica also flourishes in the moraine. It is readily multiplied by division, and may also be raised from seeds. *S. Arnott.*

CYANANTHUS LOBATUS AND C. INCANUS.

No rock garden is complete without at least one of the members of the exquisite genus Cyananthus. C. lobatus is a pretty Himalayan species, about four inches in height and of a somewhat prostrate habit. The flowers are bright purplish blue with a whitish centre, composed of fine white hairs.

C. incanus, from Sikkim, is a much rarer plant and somewhat delicate, although it flowers more freely than the species under notice, but the blooms are somewhat smaller in size, yet decidedly more beautiful in that they are of a delightful soft azure blue with the throat of the corolla tube lined with white hairs.

Both members of the genus delight to ramble in a deep compost of leaf-mould and sand in a semi-shaded nook. Propagation may easily be effected by means of cuttings inserted in early summer or in spring and struck in sandy peat. The plants may be divided in spring, but the latter method is not to be recommended. *T. D Boyd.*

HARDY FLOWER BORDER.

HERBACEOUS PAEONIES.

IN the beautiful gardens of a very old ancestral home there is a splendid collection of herbaceous Paeonies, and I have been impressed this year more than ever before by the value of the species as an item of garden decoration. For the embellishment of rooms the Paeony is well adapted, especially if the rooms are of considerable size.

My plants are growing in a border which is said to have been planned by the renowned Capability Brown. Amongst the double forms I regard Chrysolithe as one of the best; the outer petals are a clear flesh colour, while the centre petals are yellow— a really delightful combination. Lamartine is salmon-coloured, and its flowers are full and very freely produced. Madonna is the essence of refinement; the ground colour of the petals is the purest white, shot with delicate primrose and copper tints. Francois Ortegat has much the appearance of an old cottage garden Paeony, and a good deal that is not to be found in that charming old-fashioned flower; the colour is deeper for example, and the flowers are thrown well above the foliage.

Herbaceous Paeonies with a purple pigment in the flowers are not very popular because there is something indecisive about the colour of most of them. The variety Constance Devered is an exception, however. Its flowers are a clear purple-violet and they are of a good size. Though they are disliked by some florists, single Paeonies have a great following and they are being improved every year. The variety Dog Rose, for example, never needs to beg for notice. It reminds one of a very much enlarged Dog Rose of the hedgerows. The beautiful bright pink flowers are borne very profusely.

The variety Snowdrift has a very appropriate name, for the flowers are as white as drifted snow. The variety is one of the earliest to open.

Dr. Andre is a variety of the bi-coloured type and in my judgment, the best of the single bicolors. The centre of the flowers is yellow, the circumference a beautiful creamy white.

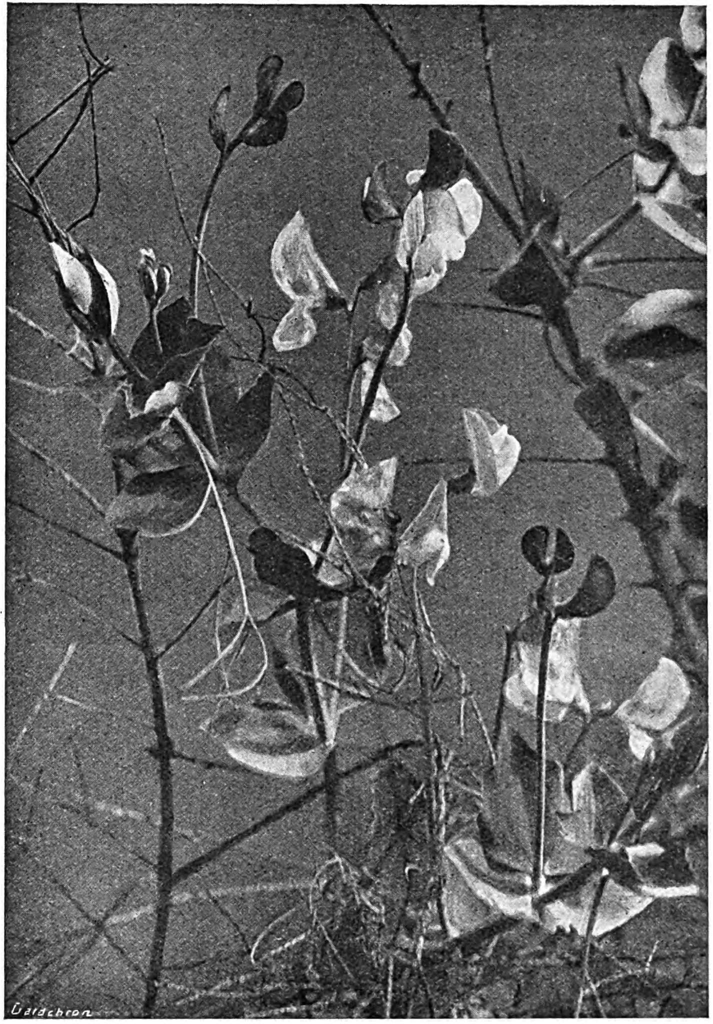

FIG. 120.—LATHYRUS NERVOSUS AT THE LAWS.

I have not seen a finer crimson single Paeony than Imperial Queen. The individual flowers are large and freely produced.

The border in which my plants are growing faces due south, being protected from the north by a ten-feet wall. The soil is a rich loam, with a balance on the heavy side, and our rainfall is between forty and forty-five inches per annum. In these conditions the plants thrive amazingly. All the above varieties produce healthy, vigorous growth and develop their flowers well above the leaves. Doubtless some of them are fragrant, which must add to their charm. I am unable to speak of their fragrance, however, because a serious motor accident some years ago deprived me of the power to smell—a real deprivation to a gardener. *George H. Copley, N.D.H.*

PENTSTEMONS.

FOR general effectiveness in the garden during late summer and autumn, the Pentstemons are almost impossible to beat. If planted out during April or early May in a fairly good loam enriched with leaf-soil and manure, and not allowed to suffer from want of water during drought, success is assured. The colours range from white to brilliant scarlet, with many beautiful intermediate shades of soft pink, rose to carmine, and purplish-lilac, and the flowers are carried on stout and prettily-branched pyramidal stems two feet tall. The flowering period is from June to September.

George Home is one of the finest scarlet varieties; Lady Mary Kidd, the finest white; while Pink Pearl is a delightful shade of rosy-pink, and most effective. Massed in beds of moderate size, Chester Scarlet, Newbury Gem, Southgate Surprise and Southgate Gem give effective shades of crimson-scarlet, and are smothered with long, graceful spikes of brilliant flowers until late autumn. Pentstemons are easily increased by cuttings taken in August and September, or from seeds. *W. Logan.*

PLANTS NEW OR NOTEWORTHY.

LATHYRUS NERVOSUS.

REFERRING to the article which appeared in *The Gardeners' Chronicle* of May 7, giving the history of Lord Anson's Pea, Lathyrus nervosus, it is just possible that the enclosed photograph of it (Fig. 120) may interest you.

I may state that at The Laws we have had no difficulty in bringing this Pea through the winter in the open, and with only a few light Spruce branches as protection. The plant of which I send you the photograph had twenty-four flowering stems on it at the middle of June. *Fred. D. Stewart Sandeman, The Laws, Kingennie, Forfarshire.*

BULB GARDEN.

HYACINTHUS AZUREUS.

Coming before the Grape Hyacinths, or Muscaris, among which it is frequently placed under the title of Muscari azureum, Hyacinthus azureus is welcomed by all lovers of early flowers, even though not of commanding stature or of brilliant effect. It is by far too little known, which is not surprising in view of the fact that it so closely resembles the Muscari that it shares the general indifference to the charms of these little flowers—an indifference far from deserved. A mass of Hyacinthus azureus, thinly planted among Snowdrops, forms a delightful picture in grass or in the rock garden, when they flower together, as they frequently do. This year H. azureus tarried long with me and the earlier Snowdrops were nigh over before the azure cones of the Hyacinth reared their heads. Even though they missed the desired combination, I had another, composed of H. azureus and Tulipa Kaufmanniana, but the colour effect attained is better if the common blue Grape Hyacinth, Muscari botryoides, is planted along with H. azureus and the Tulip. Some of the very earliest Daffodils may also be employed; and there is nothing finer than a carpet of H. azureus or M. botryoides with Narcissus pallidus praecox, in its earliest forms, flowering above it. H. azureus is now comparatively inexpensive and should be planted in generous groups in a warm, sheltered place, as, although perfectly hardy, its blooms are sometimes disfigured by severe frosts. It is exquisite with its blue bells arranged in little cones, with their lower flowers drooping and the upper ones densely crowded together; it is only about six inches high when in flower. In passing, it may be remarked that H. azureus differs from Muscari by having an open mouth to the flower.

In addition to the typical form, there are a few varieties. Of these H. a. amphibolis appears to be the only one in commerce at present. It is a little earlier in blooming than the type, and has lighter-coloured flowers. What appears to be a very fine form is that called H. a. giganteus, from north Cilicia, which was figured in *The Gardeners' Chronicle*, September 10, 1898, Fig. 52. I do not think that this is in commerce but both it and the larger robustus would be acquisitions were they available.

A light, rather gritty soil evidently suits these flowers, which increase well by offsets. With me they come too early to produce seeds. The type and varieties are natives of Asia Minor. *S. Arnott.*

NOTICE OF BOOKS.

Trees and Shrubs at Westonbirt.*

The publication of a sumptuous catalogue of the trees and shrubs at Westonbirt has a mournful interest for many of us, inasmuch as he who designed it and followed its preparation with so much interest passed away before it was ready for the press. Sir George Holford's death brought irresistibly to mind the warning penned by Horace well nigh two thousand years ago:

> . . . *neque harum qua colis arborum*
> *Te, praeter invisa cupressus,*
> *Utta brevem dominum sequetur.*

Lines which may be thus rendered in paraphrase

> With all the trees that thou hast tended,
> Thy brief concern is well nigh ended;
> Except the Cypress—*that* may wave
> A sombre tribute o'er thy grave.

The collection at Westonbirt owes its richness and variety to the intelligent enthusiasm of father and son—of Mr. R. S. Holford, who succeeded to Westonbirt in 1839, and died in 1892, and of Sir George Holford, whose loss very many friends and all good arboriculturists must deeply deplore. By these two owners these woods and gardens have been carefully tended for more than eighty years, and the difficulty presented by an oolitic soil with limestone brash, so unfavourable to the cultivation of many families of plants, has been skilfully overcome. Such soil must have proved fatal to Rhododendrons; but, fortunately, a tract of acid loam lies about half-a-mile from the mansion and this was laid out as an arboretum by Mr. Holford. Here, and in the adjoining woodland, extending to some 400 acres, Sir George was able to grow successfully very many of the Asiatic Rhododendrons which have been introduced in recent years in such bewildering profusion.

Catalogues, as a rule, cannot take high rank as literature, but Mr. Bruce Jackson must be congratulated on having made this one of more than common interest. It contains many notes of interest for gardeners and amateurs, who will find recorded the behaviour of a vast variety of vegetation—ranging from lordly Abies grandis, 106 feet high, down to Hypericum Moserianum of humble stature. But what lend to this volume its chief dignity are the fine plates enriching it. Excellent portraits of Sir George Holford and his father are placed as a double frontispiece, while reproductions of photographs of fine trees and shrubs and of garden scenery will convey to those who have never visited Westonbirt some notion of what has been accomplished in converting flat, arable fields, with hedgerow timber, into a veritable paradise. Mr. Bruce Jackson has prepared what will serve as memorial alike of a notable achievement in arboriculture and of the kindly English gentleman who carried it to fulfilment. *Herbert Maxwell, Monreith.*

PERFORMANCE OF A CONTRACT AND REMEDIES FOR BREACH OF CONTRACT.

Having considered the subject of contracts from many aspects, how they are made, the various parts and their particular forms, we have yet to discover how to enforce a contract and what remedies are given by the law to anyone who suffers a loss as the result of a breach of contract.

The first and general rule is that it is the duty of the seller to deliver the goods, and of the buyer to accept and pay for them in accordance with the terms of the contract. Delivery and payment are, unless otherwise agreed, concurrent conditions, thus the seller must hand over the goods in exchange for his money and *vice versa*.

To this general rule there are various sub-rules which are very useful to remember. The first of these deals with the case where either more or less goods than ordered are sent. The question arises: what should the buyer do? The answer is found in the rule that where the seller delivers a quantity of goods less than he contracted to sell, the buyer *may* refuse to take them, but if he accepts them as delivered he will have to pay for them at the contract rate. Where a larger quantity of goods than ordered is delivered, the buyer has three courses open to him. He can either reject the whole, or he can take those goods included in the contract and reject the rest, or he can, if he likes, accept the whole of the goods delivered and pay for them at the contract rate.

Again, where goods which were contracted for are delivered mixed with goods not included in the contract, the buyer can either take those which are in accordance with the contract and reject the rest, or he can refuse to take any of them.

The Seller's Rights.

Where the seller has parted with his goods and has failed to get the price, his remedy is to bring an action against the buyer for the amount due; it will nearly always be possible to do this in the local County Court, and a visit to the County Court Office will set the machinery in working order. If the goods are still in the seller's possession they can be retained until the money is forthcoming, unless, of course, there is any stipulation in the contract providing for the delivery before payment.

As regards re-selling the goods, this can be done if they are of a perishable nature, or after notice of intention to re-sell has been given to the buyer and he has failed to tender the price within a reasonable time. In such cases the seller may re-sell the goods and recover from the original buyer any loss occasioned by the latter's breach of contract.

Where the buyer refuses to accept the goods the seller can recover damages from him for non-acceptance—these will usually be the difference between the contract price and the market price when the goods ought to have been accepted.

Lastly, it should be mentioned that when the price is payable on a certain day, irrespective of delivery, and it is not so paid, the seller may maintain an action for the price, although the goods are still in his possession.

Where the seller refuses to deliver the goods, the buyer can bring an action against him claiming damages for non-delivery; these damages are generally estimated as the difference between the contract price and the price when the goods ought to have been delivered. The buyer has also the right to ask the Court to order the seller to deliver the goods as contracted, this remedy, however, is not often given in the case of sale of goods, although it is the usual redress in the case of sales of land. *Harold Sharman.*

AMERICAN NOTES.

HISBISCUS MOSCHEUTOS VAR. CRIMSON EYE.

Growing beside a stream which wanders through marshy ground forming an outlying portion of Greystone Estate, Yonkers, New York, are several plants of this beautiful Marsh Mallow, and during the latter part of August they made a fine display with their large, pure white flowers, each marked with a deep crimson eye, while the presence of numerous buds promised a continuous display for some time to come.

According to Bailey, there is some doubt as to whether or not this plant is specifically identical with Hibiscus Moscheutos. He suggest it may be H. oculiroseus, but admits its resemblance to H. Moscheutos. It was discovered growing in a swamp in New Jersey, and was introduced to commerce about thirty-three years ago.

The plants in question form quite large clumps with numerous, erect, herbaceous stems, four feet to five feet in height. The leaves are pointedly ovate, with long petioles, and a blade four inches to five inches in length, and almost as broad at its greatest measurement. Some of the leaves are slightly tri-lobed towards the apex, and the leaf margins are crenately toothed. The upper surface is almost glabrous and of a deep green hue, suffused with a bronze tinge, while the under surface is very softly tomentose and of a much paler colour.

From the axils of the upper leaves the solitary flowers are produced on peduncles one-and-a-half inch in length. They are widely expanded and measure five inches or more in diameter. Each of the five strongly-nerved, ivory-white petals is of good texture, and marked with a vivid crimson blotch at the base on the inner side.

As a late blooming subject for a moist situation this Hibiscus has much to commend it, while on fairly retentive soils it will flourish away from the water side and may with advantage be planted to enhance the beauty of the herbaceous border.

IMPATIENS BIFLORA.

Impatiens biflora, or the Jewel Weed, as it is called in North America, merits its popular name from the rich, orange-coloured flowers depending on slender pedicels from the leaf-axils, suggesting pendent ear-rings set with precious stones. Perhaps this is a flight of fancy, but certainly no lover of the beautiful will deny that a mass of this plant in bloom growing on the fringe of a wood or in an open woodland glade, makes an exquisite picture; the effect is very enhanced when the contrast between the bright flowers and the pale green leafage is heightened by rays of sunlight streaming through the overhead canopy.

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* *Catalogue of the Trees and Shrubs in the Collection of the late Lieut.-Col. Sir George Lindsay Holford, K.C.V.O., C.I.E., C.B.E.* Compiled by A. Bruce Jackson, A.L.S., Oxford, at the University Press: London, Humphrey Milford, 1927, Price £4 4s. net.

As the rather sappy growth suggests, Impatiens biflora is a lover of moisture, and is only found in marshy situations or by the waterside. Although it frequently grows in shady woodlands, it is equally at home in full sun, provided the requisite soil-moisture is present.

In favourable situations the Jewel Weed attains a height of five feet or more, and the stems branch in a characteristically graceful fashion, exhibiting to the best advantage the full beauty of the flowers. These latter are borne, usually, in pairs on slender pedicels from the axils of the upper leaves. Occasionally the flowers are solitary, and sometimes three together. The spur, which forms the throat of the flower, is broad and about one inch in length, the measurement across the mouth of the flower being about the same. The ground colour is a warm orange-yellow, marked on the lip and on the underside of the spur with dark orange-red blotches, in much the same way as are some of the herbaceous Calceolarias. The amount of this blotching varies considerably with individual plants; in some only a few spots appear on the inside of the throat, while in others the whole of the upper and lower lips are covered with the darker markings.

As a subject for sowing in moist places in the wilder portions of the garden Impatiens biflora is worth a trial, but as it seeds very freely and the seeds are dispersed in the characteristic manner which has earned for Impatiens the name of "Touch-me-Not," it should not be grown where self-sown seedlings are likely to be troublesome.

Impatiens biflora is closely related to the native British Impatiens Noli-tangere; it has been introduced to Britain and is now quite naturalised in several places, notably along the Thames and some of its tributaries. So sensitive is the Jewel Weed to lack of moisture that if cut in warm weather and left out of water for only a few minutes the foliage withers never to recover.

WATERING IN AN AMERICAN GREENHOUSE.

Following the usual practice in American gardens, practically all the watering necessary in the hot-houses and greenhouses on the Greystone Estate, Yonkers, New York, is performed with the aid of hosepipes. To the uninitiated this will undoubtedly seem to be a sloppy and unsatisfactory method of carrying out an important task, but, contrary to expectations, it proves highly efficient in practice, for it must be remembered that everything dries up much more rapidly here than in Britain, and even in winter time foliage, soil and stages are not liable to lie sodden for long periods as would be the case at home. Indeed, when the rapidity with which plants dry out and the relative high cost of labour are taken into account, it will be realised that any other system would be impracticable where large quantities of pot plants, fruits, Roses, Carnations, cut flowers, etc., have to be produced. Consequently, everything except Orchids and very small seedlings are watered with a hose, the flow from the hose-pipe being so regulated of course that it is no more than that obtained from the spout of an ordinary watering can.

In the largest range of glass—a range comprising thirty-one modern glasshouses and a connecting corridor, an ingenious and excellent system is installed, whereby it is possible, by turning various taps, to obtain through the hosepipe cold water, hot water or liquid manure or any two, or all three, mixed in such proportions as may be required. The cold water is obtained from the ordinary city mains and the hot water from the same source after passing through a boiler. In order to obtain the liquid manure under pressure, a special apparatus is installed, as the tank containing it is situated at a considerably lower elevation than the range of glasshouses. This tank, or rather, these tanks—for a dividing wall exists which makes it possible to store rain-water in one compartment and liquid manure in the other—are built of concrete and are of large capacity. Across the top of the dividing wall is fixed an electric pump with two intake pipes, one entering the rainwater tank and the other the liquid manure tank. A wire gauze screen prevents solid matter from entering and choking the feed pipe in the latter case. By means of regulating valves it is possible to obtain either the rainwater or the liquid manure under pressure.

Another essential feature of the system is a closed, cylindrical steel pressure tank, which is so arranged that when the pressure falls below 25 lbs. to the square inch an automatic switch is brought into operation, and the electric pump commences to work and continues until the pressure is brought up to 50 lbs. to the square inch, when the switch automatically cuts off the current and thus stops the pump. By this means a pressure is always maintained and the apparatus requires practically no attention. The cold water, hot water and liquid manure are conveyed through the houses in separate pipes and converge at convenient points in each house, where the hose pipe may be attached, so that all the man in charge has to do is to adjust his hosepipe and then regulate the three valves so that a flow at the correct temperature and desired strength is obtained. Stove plants, Roses, Carnations, Ferns, pot plants and fruit houses are all watered by this means, which does not necessitate large tanks inside each house or unsightly liquid manure tubs standing in the corners. *T. H. Everett.*

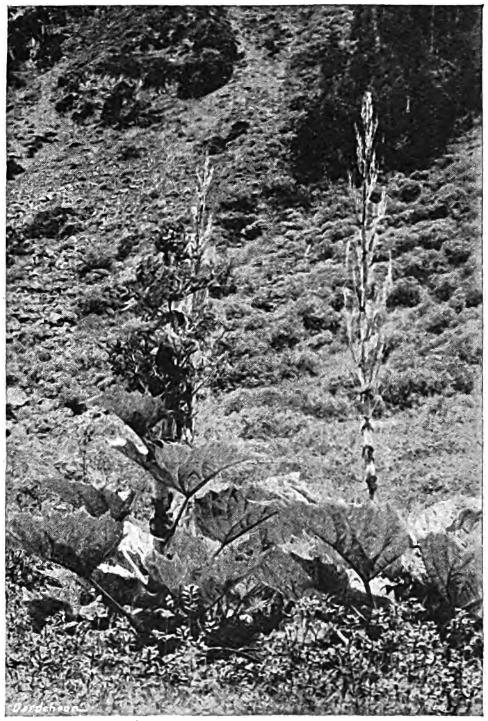

FIG. 121. GIANT RHEUM (K.W. 7101).
(see p. 268).

THE PLEASAUNCE.

During a recent visit to the seaside town of Cromer, I heard that the beautiful grounds and gardens of Lady Battersea at Overstrand were open to the public in the cause of charity, so I took the opportunity of visiting them, and as it happened to be a beautiful Sunday the visit was one of the utmost pleasure. The gardens are so bewilderingly beautiful that it is difficult to describe them adequately.

Entering by way of the cricket ground, I traversed a stretch of sward, entered the garden proper, and soon came to the Rose garden. Although it was late for Roses I was able to see that there had been a previous good show of bloom, and many of the bushes were again flowering. Most of the Rose beds are circular in shape, and contain one variety in each. Among the varieties I noted were Christine, Madame Butterfly, General McArthur, Covent Garden, Red Letter Day, Mabel Morse, Etoile de Holland, Elsie Beckwith, Shot Silk, Mrs. Henry Bowles, Mrs. Wemyss Quin, Madame Leon Pain, and Severine. Some of these beds were in the vicinity of a summer-house in the shape of a pagoda with Ivy-clad pillars and a footing of Cotoneaster, while others clustered near a sundial, both of which added charm to the arrangement. The growth of the plants was healthy and remarkably free from mildew which has been so prevalent on Roses this year.

Leaving this garden with the regret that I had not seen it in the height of the flowering-season, I passed along an expansive and well-kept path bordered on either side with trimmed Yews, Irish Yews, Golden Yews, Portugal Laurel and Golden Box, to an enclosure beautified with large Fuchsias in tubs. The last were flowering magnificently; some in ornamental vases were nearly ten feet high. Before reaching this enclosure or shaded retreat, I lingered to examine the fine herbaceous border. Looking at it from the approaching walk it appears to be framed, because on entering it one has to pass through sentinels of pillars of brick and flint covered and canopied with creepers. A wide path traverses the border which skirts it on either side. In the sunshine the beauty of this border seemed to be intensified, and many of the flowers seemed to reflect the brilliance of the light.

The borders are well furnished with well-grown specimens, including Lobelia cardinalis, Lilium tigrinum, Helenium, Achillea, Echinops, Gypsophila, Phloxes, Sidalceas and Hemerocallis. The taller plants almost blotted from view the pillar Roses at the back, whilst the foreground of the border was well furnished with lowly plants, such as Alyssum saxatile, Thymes, Sedums, Nepeta, Arabis and Saxifraga. It is a beautiful border, well-planned, well-planted and well-cared for.

I was attracted along another walk by the sight of a high pigeon-cote and a fountain. Passing along a grass walk bounded on either side by a low hedge of golden Yew, which is in its turn skirted by a pretty arrangement of such shrubs as Acers, Magnolia, Golden Holly, Buddleia variabilis and the Hedge-hog Holly (Ilex ferox), I came on an uncommon fountain. It is circular and bounded on its margin with Fuchsias and Echinops. The interior is faced in mosaic fashion with blue stones, which gives the water a sea-like appearance, and it formed a pleasing, central feature to that part of the garden.

There are many other beautiful walks which I have not the space to describe; all of them lead to some definite object. The walks in that part of the kitchen garden open to the public are either flagged or made of paving in crazy fashion. There are also pergolas covered with Roses or Pears, and a large one furnished with Laburnum which must have been an entrancing feature when clothed with the drooping chains of gold.

The water garden contains a large pond planted with Water Lilies. The mansion is approached from this part through a sunk garden girded so closely by a creeper-clad wall that one might almost mistake it for a hedge. The lower level of the sunk garden is parquetted with bricks forming paths to border the beds and panels of grass. Immediately inside the enclosing wall is a raised border with a brick retaining wall, and furnished with Heliotrope, Ivy-leaved Pelargoniums and white Alyssum. There are vases of white Marguerites, but the prevailing colours are blue, pink and white, provided by Marguerites, Heliotrope, Ageratum, Alyssum, pink Ivy-leaved Pelargoniums and dwarf Dorothy Roses. On the inner wall I noted much fruit on Pyrus japonica (Cydonia japonica). On this front is a long and handsome loggia. There is a wide view of the sea from the front of the mansion, beyond a broad expanse of lawn which extends to handsome shrubberies hat are skirted with many beautiful flowers. *William F. Rowles.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA[*]

XVI.—OVER THE IRRAWADDY-BRAHMAPUTRA DIVIDE.

At last, on July 11, after five days in the highest camp (Fig. 122), a band of coolies—Nungs, Tibetans and Lisus—arrived from below, and we set out in high spirits for the Lohit. In spite of the rain, the clouds were higher, and we could see the pass distinctly, which anyhow was not more than two or three miles away and 2,400 feet above us; I had frequently, since our arrival in this camp, climbed higher, but had never been to the pass itself. The top of the valley was approached by two abrupt climbs, linked by longer approaches on a more gentle slant; and the turf slope at the head was violet with the great Cabbage-like growths of Primula chamaethauma (Fig. 123), the 'Violet Primrose.'

We had started gaily, with two bullocks to carry some of the loads; but as they soon went on strike, their packs were transferred to two yak, picked up half way to the pass. These yak were, after great exertions, got to the top of the range, and then they, too, went on strike, or else it was deemed unwise to take them down the Tibetan side (which was almost sheer for the first 1,000 feet). Anyhow, they were returned to stock, and the men brought the loads on, the last two not reaching camp till dusk. From the pass we could see nothing, except a biggish glacier lake below, and very bare hills, for the valley took a twist just below the lake, and we could not see over the mountains ahead of us.

On the way down the steep slope I found a few plants of Primula sino-purpurea, and noticed much the same alpine flora as on the Burma side, except for the almost complete absence of the yellow Primula blandula (§ Candelabra), and of Meconopsis violacea; amongst alpine Rhododendrons were R. repens and R. campylogynum, with the 'Lapponicums,' 'Saluenense,' and 'Anthopogon'; but it was easy to see that we should not need to descend very far on this side before reaching a different flora—and so it proved.

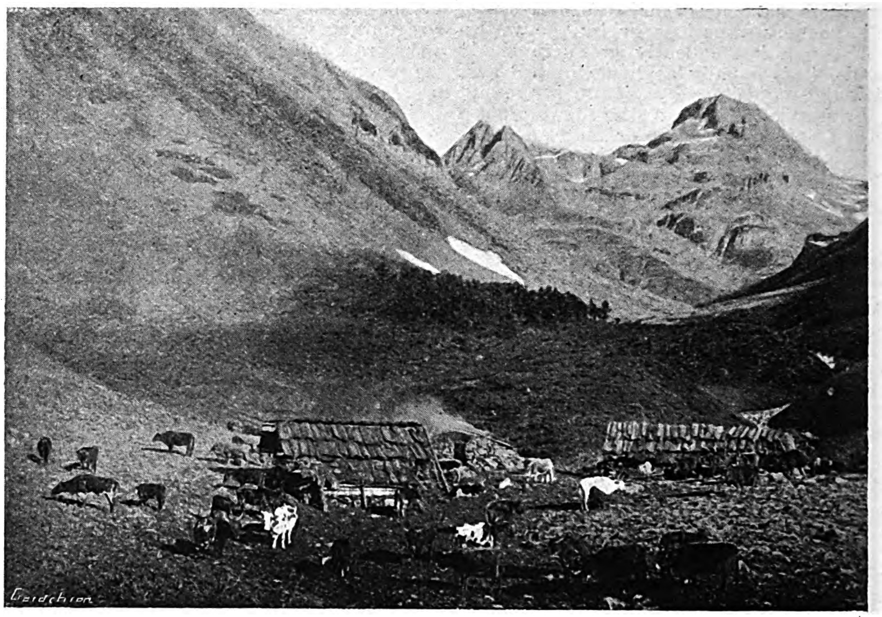

FIG. 122.—DAWN AT HIGH CAMP, 12,000 FT. ALT., SEINGHKU VALLEY.
The Diphuk La, 14,300 ft., is seen on the left.

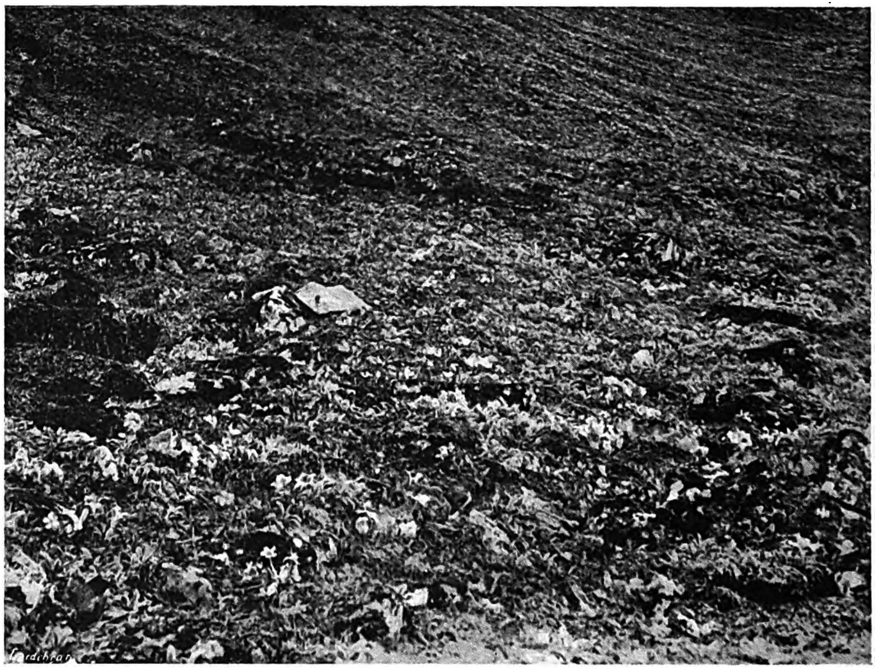

FIG. 123.—GROUPS OF PRIMULA CHAMAETHAUMA.
On alpine-turf slope, 14,000 ft. alt., Seinghku Valley.

Below the first lake we reached a second, and descending at a fair pace, we soon came to the first patches of forest (Abies, with an undergrowth of 'Souliei' Rhododendron), and camped in a meadow near the junction of the two streams. The yellow, single-flowered Nomocharis was fairly common here, also a green-spotted Fritillaria, Anemone rupicola (not seen on the Burma side), and the violet Iris. More interesting was a giant Rheum (Fig. 121), with pointed, palmate leaves, from amidst which rose a pillar clothed in red beads; this plant had not the white bracts of the Tibetan R. nobile or the Chinese R. Alexandrae, but was more like R. palmatum. It grew eight feet high in the wet mud by the side of the stream.

The next day we marched a few miles in drizzling rain, over very boggy ground, crossing many small streams, and finally camping in a thicket of Rhododendron, where we had some cover. Some of the pastures were so boggy that only Irises grew there, many of last year's capsules still containing good seeds. Patches of 'Lapponicum' Rhododendron covered much of the ground, especially on the flanks; and where stone heaps occurred there were thickets of Rosa sericea, Potentilla fruticosa, Salix, Spiraea, Pyrus, several species of Lonicera, etc. A few straggling Abies occupied dead ground, with 'Lacteum' Rhododendron, Acer, Berberis, Clematis montana, and so forth. The absence of any path made the going difficult; when we were not wading through the bogs, we were clambering over boulders, and it was hard to say which was the more unpleasant. There were myriads of mosquitos and sand flies, so that taking one thing with another, it was hardly surprising that the valley was deserted by man and beast.

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[*] The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, and September 10, 1927.

On the third day, July 13, after a minimum temperature of 47°, we descended a long way and entered the Conifer forest, where I noticed some big, red-barked Birch trees, Poplars and Maples. There was an undergrowth of small trees and shrubs, including a low-growing Ilex, a Lonicera very like L. Webbiana, one or two other species of Lonicera, Deutzia, Euonymus, a pink-flowered Rose, and numerous Rhododendrons, by far the most abundant being a small 'Heliolepis.' This latter grew either in the forest or formed dense thickets in the open, and being at this season in full bloom, was a very fine sight (Fig. 124). The flowers vary considerably, from pink to white, with a purple flash at the base; and though individually small, the trusses are large and borne very freely. The leaves are aromatic. The plant seems to grow anywhere and to be as hard as nails, so that I regarded it as quite one of the best all-round species met with. It grew only in this valley at this one spot, between 10,000 feet and 11,000 feet altitude, and we lost it next day, nor did I ever see it anywhere else; it was abundant, but strictly local. Height four feet to six feet, forming a neat bush. It is interesting to note that this species was still in full bloom when we returned this way on July 25, and doubtless it continued in flower until the end of the month. I collected a lot of last year's capsules and extracted a pinch of seeds in case of accidents; but as it turned out, we passed this way again in November, when I collected ample seeds.

In the forest I noticed Pyrola, several ground Orchids, Roscoea, species of Thalictrum, Souliea vaginata, Primula chungensis, etc. Other Rhododendrons were R. rivulare, R. trichocladum, and the usual 'Lapponicums' in the open. It was quite remarkable how different the flora was on this side of the valley, and how alike it was to the flora of the Tsangpo valley, as revealed in 1924.

On the other bank of the river there was a hot spring, visited at night by great numbers of Takin, who take the waters; and a little higher up the valley one could still cross the river on a snow bed, which, indeed, was still intact a fortnight later. The mountains on either side of us were pretty high, and even steeper than the walls of the Seinghku valley; moreover, this valley, far from widening out as we descended, only grew narrower, and was nothing more than a slit in the rocks, some 3,000 feet deep here. This accounted for the immense accumulations of snow at the bottom, the same having been emptied out of the valleys higher up. The north face—the valley lay north-west to south-east—was fairly well covered with Conifer forest, but the south face could only support dense thickets of Rhododendron; but *both* faces showed a considerable proportion of bare cliff and stripped scree.

On July 14, after a slightly warmer night, we had a fine day, though we were not blessed with sunshine. We covered five or six miles in as many hours, for though there was a track from this point on, the going was rough, and we were continually held up by torrents difficult to cross. We were in forest all day and noticed a big change in the vegetation, particularly amongst the Rhododendrons, of which I found seven species not seen on the Burma side. These were a 'Triflorum,' a 'Virgatum' a 'Maddenii,' a 'Taliense,' an 'Arboreum,' a 'Grande' and R. ixenticum. None of them was in flower, but the 'Virgatum' was probably R. oleifolium, and the 'Triflorum' looked very like the 'Mahogany Triflorum' of Tibet. The 'Grande' was abundant, forming a conspicuous part of the forest which was largely composed of huge Picea and Tsuga trees, with scattered Larix and Abies. The other Rhododendrons were more commonly found on the enclosing cliffs, or on hugh, tree-clad boulders in the river bed, or amongst a loose undergrowth which also included species of Lonicera, Philadelphus (in flower), Euonymus, yellow Jasmine, Pyrus, Ribes, Viburnum, Hydrangea, Deutzia, Enkianthus, Rosa, Cotoneaster and considerable thickets of Bamboo. But for the most part the forest was fairly open and penetrable, and we waded waist deep through an undergrowth of nothing more formidable than large herbs, including Ferns, Rodgersia, Polygonum, Impatiens, Cynoglossum, Podophyllum and Primula chungensis, with very big leaves and elongated spikes of whorled, orange flowers, by this time nearly, though not quite, over.

Where the forest was not penetrable, or where the cliffs closely invested the river, we climbed over boulders in the open, and here I found two Primulas in fruit, P. capitata just coming into flower, Lilium taliense (thus affording another link with the drier end of the Tsangpo gorge), and a small-leaved, bushy Lonicera, rather like L. nitida in general complexion, except that it was hung all over with little cream-coloured, tubular flowers which, in winter, were followed by large, plum-blue fruits. Finally, to clinch the contrast between the Di Chu valley and the Seinghku, the forest trees here were all clad with waving streamers of Lichen, sure sign of a drier climate; and an even more significant fact, which to my warped mind accounted for the entire difference of floras, was that we had just had a whole day without rain, the first for several months.

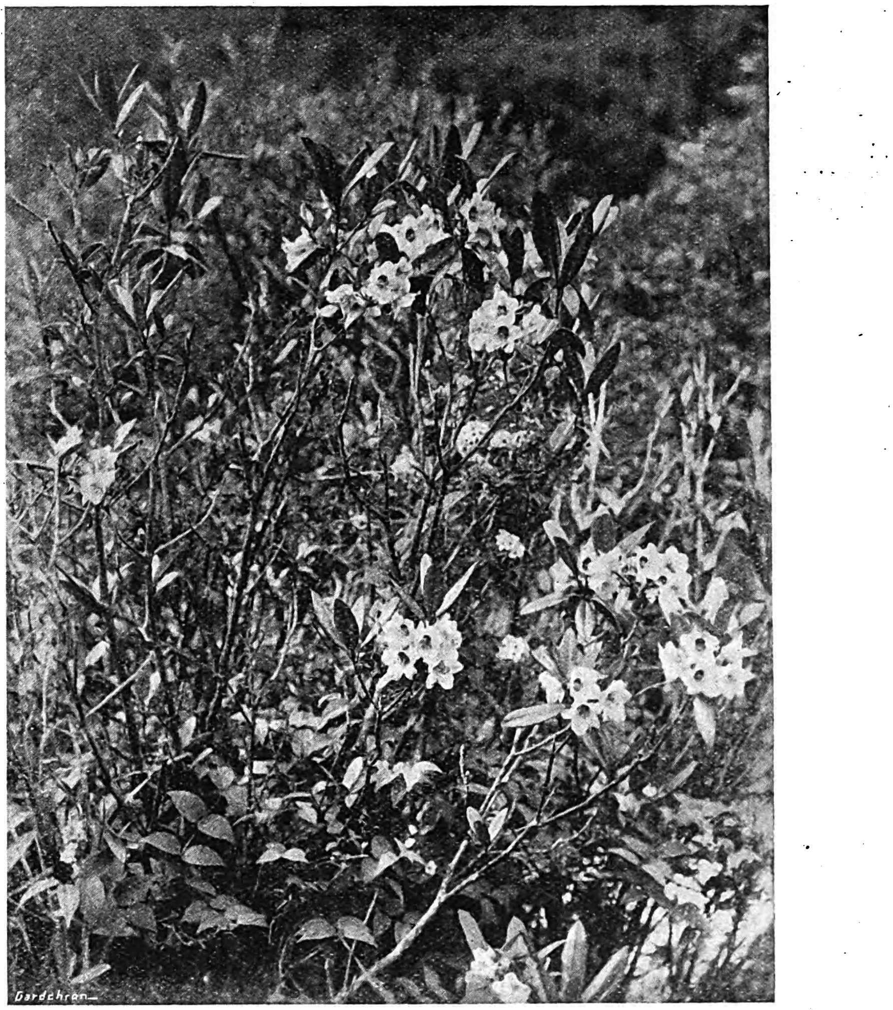


FIG. 124.—RHODODENDRON SP., K.W. 7108, § HELIOLEPIS.

We camped in the forest and on the 15th, after a minimum temperature of 51·5° (which seemed to us almost uncomfortably warm), proceeded down the valley, more than ever trapped between the cliffs and surrounded by forest. More changes intruded themselves as we descended another thousand feet. A fine 'Maddenii' Rhododendron was in bloom, sprawling over bulky boulders—flowers white, fragrant; perhaps R. Maddenii itself. R. megacalyx was also seen—flowers over, and one of the Edgworthii series, something like R. bullatum. R. sino-grande bulked large in the forest, together with Pinus sp., several Oaks and big-leafed Araliaceae. On the open boulder-chutes were bushy Hypericums, Buddleia, Vaccinium (a pretty species crowned with creamy-white flowers), Lonicera, and a number of climbing plants, such as Clematis, Vitis and Aristolochia. The valley was now narrower than ever, shut in by towering cliffs scored by deep slots, and the river, swollen to formidable proportions, came bounding down a steep, broken stairway. It was entirely overhung on both sides by large Rhododendron trees and bushes, mainly of the 'Grande' type, and in early spring when these are in flower, the scene must indeed be splendid. Yet there is but a fringe of forest here really, for immediately above the river the cliffs are scantily clothed.

We camped on a sand-spit by the roaring cataract, and so warm was it (minimum 53·5°, altitude about 7,000 feet) that I slept uneasily. The men doubted if we should reach Kahao next day, and it certainly looked as though the valley might continue for many miles yet, slowly descending; but I intended to make an effort.

Meanwhile there was plenty to do, since the flora was so different from that of the Seinghku. I have referred to six new species of Rhododendron, and on the way back I found two more. Of the Primulas, P. chungensis was new to the collection, and of two species found in fruit only, one might have been a 'Denticulata' (P. atropurpurea perhaps), the other an 'Auriculata' and neither of them had been found on the other side. At least three species of Lonicera were fresh acquisitions, so was Lilium taliense; and though Pinus longifolia occurred on the Burma side, P. excelsa was the common species here. In short, after a march through the jungle of 450 miles from Myitkyna, we had at last reached the dry zone of the Tibetan marches.

F. Kingdon Ward.

NURSERY NOTES.

MESSRS. J. CHEAL AND SONS.

Like many another successful business, the nursery of Messrs. J. Cheal and Sons, Crawley, had a humble beginning. Mr. John Cheal was a local farmer, and his sons Alexander and Joseph, the heads of the firm, decided to start a nursery business in 1871 on some of their father's farm land fronting the main road from London to Brighton. The site of the nursery originally was open, common land used for grazing cattle and geese. Mr. Cheal senior broke it up, drained and farmed it so that when his sons took it over it was exceptionally good land for their purpose. The young firm specialised in fruit trees, for which they soon gained a reputation, and in a very few years they were asked to advise and assist in the laying-out of orchards and fruit plantations in various parts of the country. Thus many of our older readers will associate the name of Messrs. J. Cheal and Sons chiefly with fruit and fruit-growing, but the firm has a big business nowadays in all branches of the nursery trade, and their establishment is one of the most complete in the whole country. They grow huge stocks of fruits, Roses, shrubs and trees, including Conifers of all kinds, hardy herbaceous flowers, alpines, Dahlias, and indoor plants, besides being seedsmen, bulb merchants, horticultural builders, makers of garden furniture and stone merchants, for they own their own quarry which furnishes the large amount of stone required by their landscape department.

For over thirty years Messrs. Cheal and Sons have figured prominently in the Dahlia world, both as raisers and growers of this beautiful autumn flower, and we doubt if any other firm grows so many of these plants. Visitors are always welcome to the nursery, and anyone who has the opportunity just now would be advised to inspect the several acres of Dahlias which, when we saw them a day or two ago, were at the height of their beauty. Mr. Joseph Cheal is one of the pioneers who worked hard in the past to popularise the Dahlia as a garden plant, and we congratulate him and his fellow workers in attaining their object, for the Dahlia is now grown more extensively than it ever was. Of all florists' flowers there is none which includes a greater variety of types or a wider range of colouring, and there is no reason why even more distinct sections of the Dahlia should not be evolved. The beautiful scarlet Coltness Gem, which has "caught on" in favour for bedding in the past year or two, represents a type which Mr. Cheal raised a very long while ago; we remember many years ago seeing Tom Thumb Dahlias a foot or so high, grouped in panel beds in a little formal garden at Crawley. The late Mr. Girdleston also raised these Tom Thumb Dahlias about the same time as Mr. Cheal, but they were neglected until the advent of Coltness Gem, and now raisers are turning their attention to this type in their endeavour to get others as good as the popular scarlet variety. The illustration in Fig. 125 shows two long borders of these Mignon Dahlias, as they are now called, on either side of a broad grass pathway, with a row of Crimson Flag and another of White Star forming the boundary. There are some thirty or forty varieties in these borders, but several are very nearly alike; the choicest half-dozen are: Emerald, a new pink variety not yet in commerce; Peter Pan, of the same colour as Coltness Gem, but claimed to be hardier and free of the disease which is attacking the older variety in many districts; Canary Bird, a rich yellow variety but rather taller than some; Grace, orange-red; Rose Bud, of the Major van Sweiten type, but dwarfer, a very pretty bloom having a rosy suffusion on a gold base and with a salmon tint; and Roy, dark crimson. Dunecht Yellow is rather too tall, but is a rich yellow, and if others are required we would recommend: Lustre, a dark-stemmed variety with brilliant crimson flowers and Lady Aileen, self-pink, with a darker centre.

On either side of the borders illustrated are big stocks of Dahlias planted in their various sections, Single, Paeony-flowered, Miniature Paeony-flowered, Collerette, Star, Cactus, Decorative and the other types into which the flower is divided. To make a selection in the respective divisions is no easy task, but we may describe some of those which appealed to us most. For instance, of the Singles, we were most impressed with Leon, a true scarlet variety of perfect form, a plant of good stiff habit which throws its flowers well above the foliage; Columbine, an old sort, but still one of the best of its colour—a rosy suffusion; Ariel, a coppery-orange variety; Pink Beauty, bright rose-pink; and Lemur, which should be included as much for its beautiful dark foliage and stems as for its rich velvety-crimson blooms with black centres.

The Paeony and Miniature Paeony Dahlias are excellent for garden decoration and valuable for supplying cut blooms. Of the large Paeony-flowered type one of the most conspicuous in the collection was Glory of Nyjkerk, a flower of deep, royal purple, set off by a beautiful golden centre. Others of merit in this section are Dream, a beautiful salmon-coloured flower on long, wiry stems; Tangerine, a very suitable variety for bedding; Emile, rich yellow; Aphrodite, one of the best whites in this section; and Mrs. E. Blount, which produces an abundance of rosy-scarlet flowers on long, stiff stems. The small Paeony, or Charm Dahlias, as they are sometimes termed, are represented at Crawley by numerous fine varieties, those of outstanding merit being Pink Perfection, a new sort not yet in commerce, but very free, with a good, compact habit; Saturn, a dwarf, strong-habited variety, producing plenty of its rose-coloured flowers that have a faint suffusion of crimson; Mermaid, a very beautiful clear yellow variety; Mrs. George Monro, with florets of a delightful pink tone in the upper part and the lower half golden; and Radium, a fine, crimson-scarlet variety growing about three feet tall.

The Cactus varieties, taken in the mass, were disappointing, for they either hung their heads so that the flowers could not be seen or the blooms were enveloped in a mass of foliage. Some, however, are fine for garden decoration, such as Joyce Goddard, a very free-flowering sort that sends up its orange flowers with a golden base well above the foliage; Guardian, a very vigorous scarlet variety; Mrs. C. Forster, pink; Mary Purrier, rich crimson; Edgar Jackson, coral-pink, a variety of good habit; White Ensign; Cygnet, yellow, marked with red lines; and A. E. Amos, crimson. Cygnet has sported and produced a self coral form.

Crawley is the home of the Star Dahlia, and of the very numerous varieties of the Star type we would still give the palm to the original White Star. Since this was raised many other beautiful varieties have been obtained by Messrs. Cheal and Sons, the best, in our opinion, being Rye Star, with an orange centre and florets tipped with rosy-pink; Burford Star, a reddish-orange variety which is almost scarlet in the young bloom; Purley Star, carmine with an orange-buff centre; Rowley Star, glowing crimson; Hyde Star, rosy-cerise, flushed with crimson at the base; Gatton Star, salmon, suffused with coppery-rose; Rusper Star, rich crimson, tipped with scarlet; and Horsham Star, a coppery-rose variety with a beautiful maroon centre.

The Decorative Dahlia is divided into the small Decorative and large Decorative, and of these the Lowfield Nurseries contain a fine collection. Of the large Decoratives, which are so valuable for making an imposing display in vases, and especially for church decorations, the variety Mrs. Wheeler Bennett is one of the best of the yellow-flowered sorts, and in the collection the blooms showed conspicuously on tall stalks well above the foliage. President Wilson, vermilion-scarlet; Mrs. David Hepburn, crimson; Mrs. A. R. Mountain, pink, flushed with silver; Anthony, lilac, suffused with purple after the Ben Lomond type; and Cheal's Yellow, a dwarf variety growing only three-and-a-half feet tall, are other good sorts in this section.

Not much advance has been made in recent years with the Collerette Dahlias, and the best in Messrs. Cheal's collection were Dulcie, orange; edged with gold and a canary-yellow collar, Lowfield Beauty, bright crimson with a yellow collar; Madame Poirier, purplish-mauve, with a white collar; and Mabel Mary, claret-coloured with a lighter collar tipped with white.

We have notes of other sections of Dahlias, such as the large Singles, Pompons and Show types, but a description of these would require more space than is at our disposal, and we may close our notice of this interesting nursery with a few remarks on the fruit trees. Quite close to the office is a magnificent tree of the old Sussex Nannie Apple, and near by are several trees of Forge, not very far from where the old forge, from which this Apple takes its name, existed, but this is now demolished. Other interesting old Sussex Apples are Emily Charles, something like Quarrenden; Mark Marshal; Betty Geeson and Crawley Beauty; the last was found in a cottage garden in Crawley and it is a valuable variety, for it flowers so late in the season that in most years it escapes damage by frost. The trees bear abundantly and the fruits keep until February.

Messrs. Cheal and Sons raise some fifty to one hundred thousand fruit trees every year, and they are worked on different stocks, according to the purpose for which the trees are required. We had an interesting chat with the fruit foreman, who informed us that, in his opinion, the present trouble with Strawberries would be largely obviated if sulphur was lightly dusted over the plants in the spring. Once when they start growing, again when the plants are throwing up their flower trusses, and finally, when the fruits begin to set. With regard to black spot in Strawberries he recommended spraying with polysulphide as a sure specific. In his opinion, The Duke is one of the best of the newer sorts, but he informed us that they had a new variety named Dumbarton Rock, which produces large, round berries of the shape of Noble, which is of great promise, for the plant is hardy and very fruitful.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 252).

MIDLAND COUNTIES.

Northamptonshire.—The fruit crops are very poor, the only exception being Black and Red Currants, which bore full crops. Apple and Pear trees flowered freely, but several severe frosts at the end of April and early May destroyed the prospect of good crops of these fruits. All the early Strawberries were destroyed by frost, and later varieties were spoilt by the continuous wet, dull weather, during the latter part of June and early July. *F. W. Gallop, Lilford Gardens, near Peterborough.*

——Nine degrees of frost on April 30 did a deal of damage to the fruit blossom and practically ruined the whole of the Pear crop which at one time promised well. A few of the early-flowering Apples suffered, and the crop of Bramley's Seedling was spoiled, after promising well. The early flowers of Strawberries were frozen, but the plants made a good recovery and we had some splendid fruits, but the Strawberry season was quite three weeks late. The only small fruit to suffer was the Gooseberry, on the upper parts of the bushes. The fruits that escaped injury were large and of fine quality. Black Currants and Raspberries fruited splendidly, but Nuts were entirely spoiled by the frosts. *A. R. Searle, Castle-Ashby Gardens, Northampton.*

Nottinghamshire.—The outdoor fruit crops are comparatively a failure and the lightest on record for the past thirty years. We experienced unusually severe frosts during April and May; on April 2 we had 8°, on the 17th, 3°, on the 26th, 4°, on the 29th, 4°, and on the morning of April 30, 14°. Pears were well set, and their ruined appearance in the early morning of May 1 was a pathetic sight; in a few days they dropped almost to the last fruit. Plums fared a similar fate. Apples are a failure with the exception of a few varieties, such as Lord Grosvenor, Lane's Prince Albert, Worcester Pearmain, Rival, Court Pendu Plat and Cox's Orange Pippin, but the last is half a crop only. Gooseberries were, perhaps, rather over the average and of good quality. *S. Barker, Clumber Gardens, Worksop.*

Oxfordshire.—The fruit crops are much better than was expected after the severe frosts experienced during the blooming period. The yield of Apples is under the average, but on the whole we have a fair crop and the fruits are swelling well. Pears, with a few exceptions, promise a good crop of clean fruits. Plums were a fair yield on walls, where they were protected, but in the open a failure, owing to frost while the trees were in bloom. Peaches are satisfactory; of Cherries and Apricots we had about half a crop. Small bush fruits, with the exception of Gooseberries, yielded heavily. Strawberries were a good average crop, although a lot of the berries were spoilt through wet weather. Royal Sovereign, Leader, Sir Joseph Paxton and Givon's Late Prolific I find do best in these gardens. *Ben Campbell, Cornbury Park Gardens, Charlbury.*

——The fruit crops are, on a whole, very good. Apples are plentiful on most trees; Plums were very poor, although we had a good amount of Plum blossom. Small fruits were very satisfactory, but excessive wet caused many Strawberries to rot. Peaches and Nectarines are as fine as I have seen of late years. The soil is of a very heavy texture on a sub-soil of clay. *B. Elkington, Berry Cottage, near Banbury.*

——The fruit crops promised to be amongst the best for many years, but the long, cold spring and severe frosts in April lightened the crops considerably. After the 12° of frost on April 29, it looked as if the whole fruit crops were ruined, but the weather being exceptionally dry, a good deal of the later blooms escaped injury, and especially in the case of Apples. Strawberries suffered severely, but the quality of the berries was good; other small fruits escaped practically untouched, and all were of first-class quality. Insect pests have been very troublesome, also a good deal of Apple mildew appeared after the cold winds. The soil is a heavy loam over stiff clay. *Victor Gammon, Eynsham Hall Gardens, Witney.*

(*To be continued*).

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents*].

Iris dichotoma.—Three plants of Iris dichotoma which I owe to the kindness of my friend, Mr. T. Hay, grown in a cold greenhouse, have given me much pleasure. The first blossom appeared on July 25, the last on September 16. The three plants produced six blossom stems. The blossoms appeared after 3 p.m. from four to seven at a time and lasted something over three hours. They have a pleasant though not a strong scent. The height of the tallest stem was thirty-one inches. One of the three plants had flowers a little darker than the other two; they varied from a pale pinkish mauve to a pale violet. They have produced about a dozen good pods of seed. *G. Yeld, Orleton, Gerrard's Cross.*

The Lily Season in Southern Scotland.—Though we have frequently had floods of rain, followed by almost tropical sunshine, in the south-western regions of Scotland, atmospheric influences have been by no means adverse to the successful cultivation of Lilies. The finest example of Lilium giganteum I have seen for years was at Mr. Kenneth McDouall's garden at Logan House, about a month ago. Grown on the green fringes of a sheltering wood, which intervenes picturesquely between the famous gardens and the stately mansion house, "amid its green, ancestral trees," it was a veritable giant in stature, approximating to a height of thirteen feet, and bearing twenty-three enormous flowers. Only at Lochinch or Castle Kennedy, close to the remains of the ancient castle, have I seen this Imperial Lily rising so majestically. Other Lilies that have been almost equally impressive at Logan for the last two years are L. Willmottiae, L. Grayi, L. philippinense formosanum, L. regale (one of the loveliest flowers in cultivation), L. Burbankii, L. Brownii and L. auratum platyphyllum, which, according to my experience, requires a sheltered situation, otherwise its petals suffer greatly from high winds. Most of these Lilies are cultivated at beautiful, wood-environed Monreith, by Sir Herbert Maxwell, with striking success; and particularly the beautiful L. regale, which is illustrated and attractively described in his *Flowers, a Garden Notebook*. The predominating Lily at Castle Kennedy, as I have already suggested, is Lilium giganteum, but still more fascinating are the varieties of Nymphaea Marliaceae, in the miniature lake; almost midway between the Old Castle and the New. I should have mentioned somewhat earlier in this short contribution that at Logan, the lovely blue Lily of Zanzibar, which is new to this southern region of Scotland, has proved a great and gratifying success. On my own borders the Lilies that have been most successful are L. candidum, finely effective and without disease; L. longiflorum giganteum, which is grandly ornamental; and the refined L. speciosum magnificum. As my flower borders are now adequately protected by a garage (which I have covered with the finest climbing Roses) from northerly winds, I hope to cultivate the great Lilies of the Himalayas, of western China and California, with almost equal success. *David R. Williamson.*

Lorette Pruning.—Should your correspondents, Messrs. Impey and Cheer, happen to be in this neighbourhood, I shall be happy to show them trees which have been treated on the above plan since 1913, with some interference during the war period. Also Plum and Morello Cherry trees which have been treated on the allied scheme, which I detailed some while ago in these pages. Luckily, I visited M. Lorette in 1914 to get certain obscurities cleared up, just before war broke out (resulting in the lecture I gave to the R.H.S. a year or two later); thus one cleared away some fables such as the "pencil thickness," for out of some hundreds of shoots the old gentleman cut off not a single one had attained to such a size! *H. E. Durham, Dunelm, Hereford.*

A Summerless Summer.—In your issue of September 10, a note appears on the unseasonable summer. My memory takes me back to a season when there was no summer, and when I remember a woman, who had waited hopefully, saying in mid-October, "I really do not think we shall get any summer at all." This was in 1860, which I have cause to remember, for I was entrusted with the task of rearing the bedding plants for furnishing the R.H.S. gardens at South Kensington, which were opened the following year. Purple King Verbena was largely in request, and it was very difficult to procure healthy cuttings, for the stunted stock was almost devoured by thrips, and there was no XL All insecticide then. At last, by the aid of an ordinary hot-bed, we succeeded in getting a healthy stock and then all was easy. There was a collection of Verbenas on trial, but they were a complete failure. On Christmas eve there were 34° of frost, *i.e.*, 2° below zero, and as the thermometer was under the charge of Mr. Robert Thompson and overlooked by Dr. Lindley, the reading was probably correct. In corroboration of this, trees of Cedrus Deodora, in Glendenning's nursery, twenty feet to thirty feet high, were killed outright. On that eventful night the boiler heating the house in which the Geraniums were stored broke down. Fortunately, our old friend Mr. Barron, knew how to act. The house was covered with thick canvas early in the morning. The sun afterwards came out brightly, and when the temperature in the house rose to freezing point, the plants were syringed with cold water, and the ice thawed gradually, when the plants were removed to another house and not one of them was lost. In proof of my success under difficulties, I may be allowed to state that the Council of the R.H.S., on the recommendation of Mr. Eyles, the Superintendent, awarded me a donation of five pounds, which, I need not say, I was very proud to receive. *Wm. Taylor, Bath.*

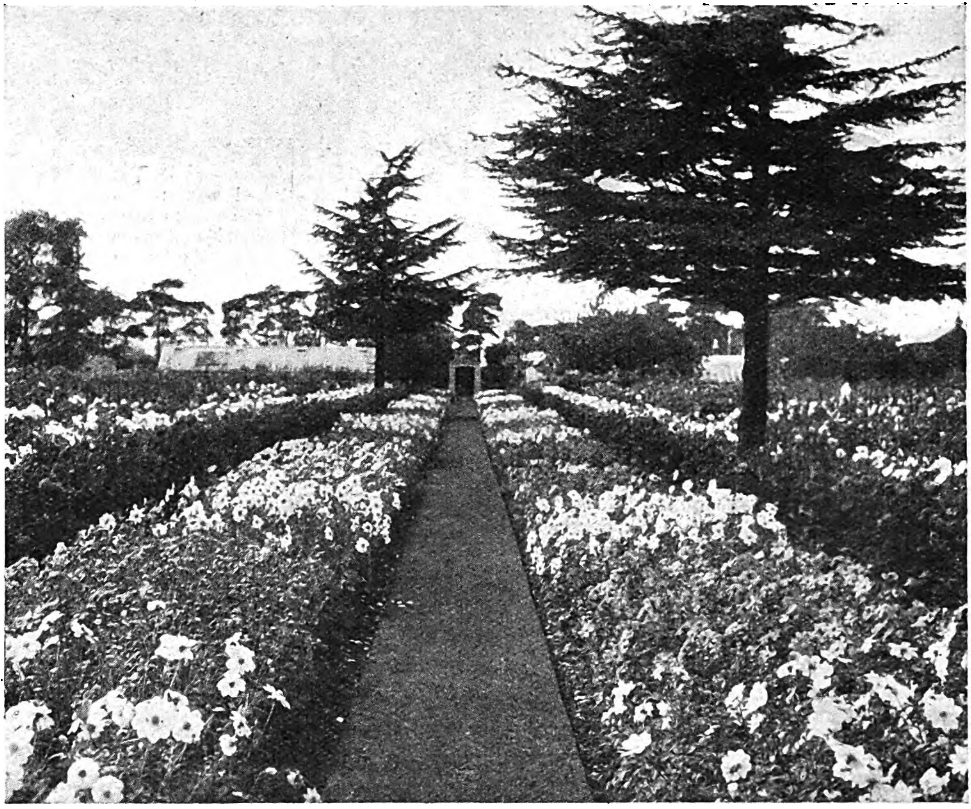


FIG. 125.—BORDERS OF MIGNON DAHLIAS AT LOWFIELD NURSERIES, CRAWLEY.
(see p. 270).

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION AT HOLLAND PARK HALL.

September, 28, 29, and 30.

THE Autumn Show of the Royal Horticultural Society, in Holland Park Hall, London, on the above dates, was favoured with beautiful weather and bright sunshine. The hall did not present such a sombre appearance as usual, for the top light on a dull day is very poor. Viewed from the gallery, the building presented a galaxy of beautiful colours, to which Dahlias, Roses, Michaelmas Daisies, Carnations, Orchids, Begonias, Chrysanthemums and other flowers contributed. Hardy border flowers largely predominated, but there was sufficient of other subjects to provide plenty of variety, and on the whole, the show was a great success. Fruits and vegetables were relegated to the gallery, and only narrow tabling was provided for them, so that it was impossible to show them to advantage.

This is to be regretted, as autumn is the time when hardy fruits are at their best, and they are as interesting as, say, Michaelmas Daisies, which were shown on every hand downstairs.

The outstanding exhibit was Messrs. Blackmore and Langdon's Begonias.

Orchid Committee.

Present: Sir Jeremiah Colman (in the Chair), Mr. Gurney Wilson (Hon. Secretary), Mr. J. E. Shill, Mr. J. Wilson Potter, Mr. J. C. Cowan, Mr. Richard G. Thwaites, Mr. A. A. McBean, Mr. T. Armstrong, Mr. R. Paterson, Mr. S. W. Flory, Mr. E. R. Ashton, Mr. Stuart H. Low, Mr. Fred K. Sander, Mr. Frederick J. Hanbury, Mr. H. G. Alexander and Mr. Chas. H. Curtis.

Awards of Merit.

Odontoglossum Toreador (*Laurentia* × *crispum-Solon*).—This has large round flowers with pure white ground, and one or two red brown spots on most of the segments. The petals and sepals have "shadowy," shaded markings of rose on each side of the central white area. The lip has a pair of rich red-brown markings below the golden disc. Shown by Messrs. Charlesworth and Co.

Laelio-Cattleya Momus, Low's var. (*C. Octave Doin* × *L.-C. Rubens*).—A handsome, rounded flower of excellent size, form and substance. The colour is soft purplish mauve, slightly paler at the margin. Lip broad, rich velvety purple, with the throat veined with old gold. Shown by Messrs. Stuart Low and Co.

Other Novelties.

Messrs. Armstrong and Brown showed Catleya amabilis Our Queen and Odontioda Juno carrying a branched spike of nearly sixty purplish-rose and white flowers. Baron Bruno Schroder sent a flower of a grand form of the yellow Brasso-Laelio-Cattleya Margery.

Messrs. Charlesworth and Co. showed Brasso-Laelio-Cattleya Asmodia and one or two other interesting plants and Messrs. J. and A. McBean exhibited Cattleya Eneas var. splendens, with old gold sepals and petals; and Laelio-Cattleya Profusion var. Pacific.

Groups.

Messrs. Stuart Low and Co., who were the only exhibitors of a group of Orchids, had a display wherein Vanda coerulea figured in the background, with fine plants of Cattleya Hardyana, while just below these were capital examples of Odontoglossum grande. Conspicuous on one side was a specimen of Cattleya Gaskelliana with thirteen flowers. The yellow C. Junia was also very much in evidence, while C. amabilis and C. Momus were also good and effective. Other interesting things in this group were Sophro-Cattleya Doris, Cobb's variety, with one brilliant bloom; Burlingtonia fragrans, with two spikes of its white, delicately-scented flowers; Sophronitis grandiflora; Cypripedium Fair - Maud (Fairrieanum × Maudiae), C. Godefroyae and several useful Odontiodas and Odontoglossums.

Floral Committee.

Present: Section A—Mr. F. J. McLeod (in the Chair), Mr. J. T. West, Mr. E. R. Janes, Mr. D. B. Crane, Mr. H. J. Jones, Mr. A. E. Vasey, Mr. J. M. Bridgeford, Mr. Chas. E. Pearson, Mr. Geo. Churcher, Lady Beatrix Stanley, Mrs. Ethel M. Wightman, Mrs. Helen Lindsay Smith, Mr. R. Findlay, Mr. Donald Allan, Mr. Hugh Dickson, Mr. Wm. Howe, Mr. Arthur Turner, Mr. G. W. Leak, Mr. W. B. Gingell, Mr. Jas. B. Riding, Mr. Courtney Page and Mr. M. C. Allwood.

Section B—Mr. Gerald Loder (in the Chair), Mr. W. J. Bean, Mr. R. C. Notcutt, Mr. A. Bedford, Mr. E. H. Wilding, Mr. T. Hay, Mr. James Hudson, Mr. W. G. Baker, Mr. Amos Perry, Mr. L. R. Russell, Mr. F. G. Preston, Mr. W. B. Cranfield, Mr. Hiatt C. Baker, Mr. J. Yeld and Mr. E. Marsden Jones.

Awards of Merit

Fremontia mexicana.—This has pale yellow flowers and fine-lobed leaves that are grey on the under sides. The stems are also downy. We believe this species flowers in a much younger state than the well known F. californica. Shown by Mr. J. Hay, Hyde Park, and Mr. R. C. Notcutt.

Bertolonia sericea cristata.—A very handsome stove foliage plant with broad, deep green leaves that are veined, cross-veined and spotted with silver in a very beautiful fashion. The margins of the leaves are crisped and waved. Shown by Messrs. L. R. Russell, Ltd.

Gaultheria Forrestii.—A lowly shrub with ovate lanceolate, stiff, green leaves, that have serrated margins. The small, bluish fruits are borne in little clusters from the axils of the leaves and show to best advantage when viewed from below. Shown by Messrs. Robt. Veitch & Son.

Gentiana Pneumonanthe.—Our native Gentiana and one of the bluest of blue flowers. The flowers are almost sessile, opposite and borne in the axils of the upper leaves. As shown it was about 1 ft. high, but the height varies greatly from four inches upwards. Shown by Colonel Stephenson Clark, Borde Hill, Cuckfield.

Canna Sweetheart.—A bold large flowered variety, bearing so many as ten expanded blooms on one spike. Colour, rich rose-tinted salmon, almost scarlet in the newly opened buds. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree.

Aphelandra squarrosa var. Leopoldii.—In this stove plant the broad green leaves are heavily veined with creamy-white. The spike is conspicuous by reason of the imbricating, pale yellow bracts. Shown by Messrs. L. R. Russell, Ltd.

Chrysanthemum Gloria.—A deep golden-yellow decorative variety, with reflexing, pointed florets. Shown by Messrs. Cragg, Harrison and Cragg.

Chrysanthemum Daffodil.—A bright yellow, early-flowering variety, with dark stems and foliage. Shown by Mr. H. Shoesmith, Junr.

Chrysanthemum Glow.—A rich chestnut-coloured decorative variety with golden tips to the florets. Shown by Mr. H. Shoesmith, Junr.

Chrysanthemum Jack Robbins.—A showy early-flowering variety with reflexing florets. The colour is deep apricot with a bronze suffusion. Shown by Mr. H. Woolman.

For Trial at Wisley.

Aster Empress of Colwall.—This is a double-flowered variety bearing plenty of rounded rosy-mauve flowers. Shown by Mr. Ernest Ballard.

Aster Amellus Sonia.—The bright rose-coloured flowers are of rather more than average size and are well disposed. Shown by Mr. T. Bones.

Kniphofia Cardinal.—A dwarf variety bearing spikes of dark cardinal coloured flowers. The spikes bend over gracefully at the tips.

Kniphofia Yellow King.—The heads of flower of this variety are larger than those of the foregoing and are a pleasant yellow shading.

Kniphofia Fireflame.—This is a large spike of uncommon colouring. The yellow ground colour is heavily flushed with fiery orange. All three varieties were shown by Messrs. G. Lubbe and Son.

New Dahlias.

The Joint Committee selected the following new seedling Dahlias for trial at Wisley:—

Dorothy Brousson.—A free-flowering Cactus variety of considerable garden value. The medium-sized flowers, which are borne on long stems, are yellow. Shown by Mr. H. S. Brousson.

Jean.—A good white Miniature Paeony-flowered variety.

Ethelwulf.—Is a well formed white Star Dahlia. This and the above were shown by Mr. Charles Turner.

Polly.—A yellow, Miniature Paeony-flowered variety. Shown by Mr. J. Mattock.

Rye Star.—A very pretty flower which has a stippled golden centre and is broadly tipped with pink.

Little Marvel.—A well-formed, rosy mauve Pompon variety. Both were shown by Messrs. J. Cheal and Sons.

The Bishop of Llandaff.—An attractive Miniature Paeony-flowered variety of glowing, deep crimson colour. The divided foliage is dark purple.

Mrs. Kenneth Webb.—A glowing orange Miniature Paeony-flowered variety. This and the above were shown by Messrs. Wm. Treseder Ltd.

Zulu.—A large Single of rich orange colour. The large, divided leaves are stained with purple.

Mrs. A. S. Galt.—A rich red miniature Paeony-flowered variety.

Mrs. H. R. Beeton.—A bright crimson Miniature Paeony-flowered variety. These three Dahlias were shown by Mr. A. J. Cobb.

Columbia.—A medium-sized Decorative variety of deep rosy-mauve colour.

Miss J. Kenkel.—A large light ruby-coloured Decorative variety. These two varieties were shown by Mr. F. P. Majoor.

Roses.

Roses were an unusually fine feature of the show and the numerous exhibits arranged all along one side of the hall provided a fine demonstration of the value of these flowers for the autumn.

Messrs. Alex. Dickson and Sons staged large baskets and stands of blooms that had withstood the weather and the journey from the North of Ireland. A few of their best sorts were Dame Edith Helen, Lady Helen Maglona, Ophelia, in fine form, the yellow Christine, the exquisite Shot Silk, Lady Mary Elizabeth, of rich rose-red colouring; the golden Mrs. Wemyss Quin, Madame Butterfly and the deep crimson Col. Oswald Fitzgerald.

Mr. Elisha J. Hicks exhibited rather stiffly arranged, upright stands of Joanna Bridge, F. K. Druschki, Golden Ophelia, the deep red Covent Garden, Independence Day, Lady Inchiquin, Emma Wright, the white Mrs. H. Stevens, Clovelly, and many other good sorts.

About eighty low bowls and bunches of Roses made up the bulk of the exhibit from Mr. J. Mattocks, while a few tall stands of Moonlight, Irish Elegance and Coral Cluster were used as a background. The flowers in the bowls were very clean and bright, the chief varieties represented being Golden Emblem, Golden Ophelia, Mrs. H. Winnett, Red Letter Day, Etoile d'Holland, Los Angeles, Chas. E. Shea, Marcia Stanhope and Emma Wright.

Messrs. S. McGredy and Son exhibited a very pretty group of Roses, their centrepiece being a large basket filled with the rich pink Mrs. A. R. Barraclough. Around this were other baskets and stands of Los Angeles, Arthur Cook, Admiration, Margaret McGredy, Golden Emblem, Edel and Betty Uprichard—a very fine exhibit.

The bright display made by Mr. J. H. Pemberton included many varieties of his own raising, such as Pax, Penelope, Prosperity, Vanity and Moonlight. With these were associated bowls and stands of Mermaid, Helen Taylor, W. F. Dreer, I. Zingari, Los Angeles, Bernice, Naomi, Betty Uprichard and The Adjutant.

Mr. George Prince had a beautiful exhibit of baskets of Roses with a few stands as background. Mabel Morse, Mrs. C. Page, Covent Garden, Golden Emblem, Madame Butterfly, Lady Inchiquin, K. of K., Roselandia and Lady Pirrie were all charmingly shown in big baskets.

In the contribution from Messrs. D. Prior and Sons we noticed good stands of Golden Emblem, Ophelia, Hugh Dickson, Gooland Beauty, of fine colour, General McArthur, Elsie Poulsen, Lady Inchiquin, Los Angeles and Frank Reader, the last represented by fine flowers of pleasing pale lemon yellow colour. The Polyantha variety Orange King was also well shown.

Mr. T. Robinson, Nottingham, set up a bold exhibit of stands and baskets of capital flowers of Lady Pirrie, Shot Silk, Col. O. Fitzgerald, Mrs. H. Stevens, K. of K. (very fine), Emma Wright, Mrs. Henry Bowles, Christine and Madame Butterfly. The front of this exhibit was finely furnished with flowers and Rose foliage.

Messrs. A. Warner and Sons adopted a different method of display from most other exhibitors and arranged bunches of blooms against a background of black velvet. Prominent varieties were Shot Silk, W. F. Dreer, Elsie Poulsen, Betty Uprichard, Madame Herriot, Lady Roundway, Lady Inchiquin, Emma Wright and Golden Emblem.

Conspicuous in the centre of Messrs. Waterer, Sons and Crisp's bold display was an arch of the soft yellow Phyllis Bide. Other sorts shown in bold masses were Covent Garden, K. of K., Mrs. H. Stevens, Salmon Spray, Lady Inchiquin, Elsie Poulsen, Lady Pirrie, of excellent colour, and Shot Silk.

Messrs. Wheatcroft Brothers showed good blooms of The Queen, Alexandra Rose, Souv. de Claudius Pernet, Angele Pernet, Los Angeles (very fine), Madame Butterfly, Betty Uprichard, Gwenneth Jones, Ophelia—a richly coloured sport from Emma Wright, and a dark sport from Lady Pirrie, both unnamed.

Messrs. Frank Cant and Co.'s display was a bold one, and a fine basket of Golden Emblem figured in the centre, while behind it were stands of Mrs. Henry Bowles, Phyllis Bide and Betty Uprichard. In addition, there were good examples of La Reine Elizabeth, a deep red polyantha variety; Ophelia, Shot Silk, Los Angeles and Orange King.

Messrs. Chaplin Bros. had a handsome display of tall stands arising among low borders of very clean and bright flowers. A few outstanding sorts were Waltham Cross, a more brilliant K. of K., the white Innocent, Shot Silk, Ophelia, Lady Inchiquin, Los Angeles, Madame Abel Chatenay, Golden Emblem, Emma Wright, Covent Garden, Princess Elizabeth of Greece and William Chaplin, a new, fragrant, crimson sort.

Messrs. Walter Easlea and Sons' arrangement needed a few more flowers along the front. The leading varieties shown by this firm were Rev. F. Page Roberts, Mrs. Henry Bowles, Betty Uprichard, the dainty Mermaid, Los Angeles, William F. Dreer (very fine), Angele Pernet and Madame Abel Chatenay.

The golden yellow variety Cecil was conspicuous in the centre of Messrs. Benjamin Cant and Co.'s exhibit, while there were also fine examples of Shot Silk, Mrs. Beatty, Red Star, Madame Butterfly, Emma Wright, Lady Pirrie, Scarlet Climber and Henrietta.

Messrs. Wood and Ingram made a bold display of Angele Pernet, and their numerous flowers were very fresh and of fine colour; this firm also exhibited Shot Silk, Christine, Etoile d'Holland and Florence Izzard.

Chrysanthemums.

The early-flowering Chrysanthemums were shown in rather greater quantity than last year, and there were some exceedingly good collections of this valuable autumn flower. Messrs. Puttridge, Ltd., staged generously filled stands with well-grown flowers of the best varieties, including Bedford Beauty, Charlotte Harley, September White, Phoenix, Shirley Bronze, Wembley and Cranford Cream. Mr. H. Woolman associated his Chrysanthemums with Dahlias and his chief varieties were Red Ensign, Radio and Mrs. Jack Pearson.

There was a wealth of blossom in the large exhibit of Messrs. Keith Luxford and Co. which was composed almost solely of sprays. They used, with effect, Cranford Cream, Mrs. Jack Pearson, Perle Chatillonaise, Pink Profusion, September Yellow and J. Bannister. Mr. Wm. Yandell also staged a good collection of early-flowering varieties, and he set up vases of Crimson Circle, September Glory, Harvester, Sanctity, Red Almirante and Bronze Buttercup.

Stove and Greenhouse Plants.

One of the most graceful exhibits in the hall was the group so delightfully arranged by Messrs. John Peed and Son. This was on the best exhibition lines; grace and elegance were provided by the well-grown plants of Humea elegans and Palms. Many Caladiums, with large leaves of great delicacy and beauty, Codiaeums (Crotons) in variety and of good colour, and Hydrangeas, both of the Hortensia and H. paniculata types were freely used, and there were also little batches of Streptocarpus and Achimenes coccinea. Ficus repens and Ferns made a fitting groundwork, and there were occasional specimens of Liliums and well-coloured Nandina domestica.

Seldom, if ever, have Messrs. Blackmore and Langdon shown the double-flowered, tuberous-rooted Begonias, for which they are so justly famed, better than on the present occasion. The flowers were truly "prodigious" and, although enormous, were of the highest possible quality. Of the many sorts on view, we especially admired Mabel Langdon, rich orange-pink; Hilda Langdon, soft pink; Mrs. E. Ramsden, deep rose; Lady Ann, medium pink; Corientia, rose; Peace, cream; and Sir J. Reid, orange.

In a large circular group, Messrs. Sutton and Sons displayed a large number of double-flowered Begonias from seed sown in January of this year. The flowers were, naturally, smaller than those of the above collection, but they were of good form and illustrated a very desirable strain. They were set out in radiating batches of distinct colours, such as orange-scarlet, orange-yellow, crimson, pink, and there was a collection of equally good plants of Duplex seedlings.

A circular space of similar size to the above was filled by Messrs. Carter and Co., where they made an attractive display with a centre of Liliums and Clerodendron fallax bearing huge compact heads of brilliant flowers, surrounded by a great many distinct varieties of Begonia of the B. semperflorens type. The most showy varieties were Prima Donna, Broadcast and Bedding Queen. This most pleasant group was surrounded by a broad edging of rich green seedling grass.

On the staging, Messrs. R. and G. Cuthbert displayed a good strain of Streptocarpus, interspersed with vivid scarlet heads of Rochla falcata. A particularly interesting collection of succulent plants was shown by Mr. Sydney Smith. This was mostly in small plants, and a large variety was set out. The specimens included Echinocactus Grusonii, Opuntia robusta, Mamillaria perbella, Cereus flagelliformis, Echinocactus cristata and various Gasterias. He also staged a splendid variety of Echeverias and Mesembryanthemums. Messrs. George Bunyard and Co. contributed an interesting collection of uncommon Fuchsias growing in relatively small pots. The many sorts included Fuchsias Thompsonii, F. gracilis and varieties, F. Riccartonii, F. conica, F. longipedulata and mimosa.

Greenhouse Carnations were shown in considerable quantity by Messrs. C. Engelmann, Ltd., Messrs. Allwood Brothers and Messrs. Stuart Low and Co., and these made a very bright display. The first-named had large vases of Master Michael Stoop, Spectrum, Laddie, Red Laddie, Coral Glow, White Pearl, Topsy and Nero, while the last-named gave prominence to Happidais, an orange-coloured variety; Queen Mary, very dark maroon; Daphne, a mauve and heliotrope Fancy; and Ruby Glow. The chief sorts staged by Messrs. Allwood Vrothers were Maud Allwood, White Pearl, Laddie, Red Laddie, Maine Sunshine and Eldorado. They also had pans of the free-flowering Dianthus Allwoodii.

Dahlias.

The many collections of Dahlias filled a considerable amount of space, and provided brilliant masses of colouring. A large, circular group, arranged by Messrs. Dobbie and Co., was especially successful and was one of the best features of the show. Their many varieties included Joan Fife, Rosie Supreme, Moorkoop and Dazzle of the small, Paeony-flowered type; Sheila, Gloriosa, Glen Devon and Tuscar of the Collerettes; Pink Coltness, Dinkie, Peter Pan and Paisley Gem of the dwarf, single-flowered varieties. They also had equally good examples of other types.

An imposing display of excellent Dahlias was made by Messrs. Wm. Treseder, Ltd., who arranged tall stands of J. Emberson and Andreas Hofer, of the Cactus type: Aristocrat, Trentonian and Jersey Beauty of the large Decorative section; while along the front they had smaller vases of Portia, Dazzle and Bishop of Llandaff.

Mr. H. J. Jones made a very graceful display with his Dahlias, which were arranged with sprays of Gypsophila paniculata and grasses. He included vases of George Duncan, Andreas Hofer and Forest Maiden, Cactus varieties; Jersey Beauty, Jack Hobbs and Robert Treat, of the large Decorative varieties; and also had tiny Pompon varieties. Mr. J. B. Riding staged particularly good blooms. His chief sorts were Jersey Beauty, Jack Hobbs, Gold Rush, Madame E. Ludwig, Berengaria and Purple King, large Decorative; Glory, Fairy, Cathe and Mac of the small Paeony-flowered types. The Cactus varieties were displayed by Messrs. Jarman and Co., who included Edgar, S. Jackson, Madame C. Good and Andreas Hofer while they also staged flowers of the other sections.

The miniature Paeony-flowered varieties were prominent in the collection of Mr. J. T. West, whose varieties included Lady Godfrey Faussett, Winter Sun, Dazzle, Modiste and Beacon. Of the large Decoratives he had Border Perfection, Jersey Beauty and Mabel Lawrence.

A select little collection, arranged by Messrs. James Stredwick and Son, included specimen blooms of recent novelties, such as Canberra, W. D. Cartwright and Leviathan, large Decoratives; F. W. Fellows, Doreen Woolman, Nanette and Mrs. Fred Warner, Cactus varieties. Messrs. Carter Page and Co. gave prominence to Harry Strutt, Pink Favourite, Clothilde, Fireman and Jersey Beauty. In a large and well-arranged collection, Messrs. Dickson and Robinson had many beautiful flowers of the small Paeony-flowered section, such as Espoir, Lady Mary Hope, Hilda M. Wheeler, Topsy and Peggy. They also had equally good varieties of the large Decorative and Cactus sections.

In addition to the vases of Dahlias associated with his early-flowering Chrysanthemums, Mr. H. Woolman filled a considerable space with Dahlias alone. He staged Mabel Lawrence, E. Vandermeer and Noble, of the large Decoratives, and a representative selection of Cactus and Pompon varieties. Messrs. Reg. Winder, Ltd., showed Siskiyou, Mephistopheles, Nagel's Ideal and Roi de Jaune. Messrs. D. Prior and Son and Mr. H. Clarke set up good Dahlias.

Messrs. H. Langridge and Co., Westerham, Kent, showed Dahlias as a very dainty exhibit with a few big epergnes of Michaelmas Daisies.

A very big exhibit of Dahlias and border Chrysanthemums was shown by the King's Acre Nurseries. The Dahlias represented the best sorts in all sections. A big stand of the white Miss Krelage mixed with the scarlet Coronation made a pleasing contrast of colours. E. F. Hawes, a pink Cactus variety, Pink Favourite, large Decorative, Yellow King, Aldenham, Moercap, Dempsey and Yellow Collosse were very prominent. The Chrysanthemums included a seedling from Dick Barnes, a small, circular bloom of dark chestnut-crimson colour named Crimson Circle. September White, Goldfinder and Mrs. Phil Page are other notable Chrysanthemums shown well by this firm.

Messrs. J. G. Ballego and Sons, Bloemhove Leiden, Holland, showed Dahlias, including Apoldro, a Zinnia-flowered variety of bright red colour and Miniature, a pretty small Cactus variety of pink colour.

Hardy Flowers.

The exhibits of hardy flowers constituted the most numerous of the exhibits, and most of them contained varieties of Michaelmas Daisies. A few rock gardens were shown, but none was of outstanding importance.

Messrs. Bunyard and Co., Ltd., showed great sheaves of Michaelmas Daisies, Helenium autumnale, early-flowering Chrysanthemums, Coreopsis, Anemone japonica, Rudbeckias, and other late border flowers. They showed a new variety of Aster Amellus named Hermann Lons, a big flower of soft mauve colour. They also had, as a separate exhibit, a collection of hardy Fuchsias.

Mr. G. Lubbe, Oegstgeest, Holland, showed seedling Tritomas raised from T. hybrida alba. The best were Fireflame (Vuurvlam), rich yellow, heavily marked with deep orange, a fine, glowing colour; Coleur Cardinal, dark red; rosea, delicate rose blush; and Lucifer, deep orange.

Mr. Ernest Ballard, Colwall, showed a good group of Michaelmas Daisies, of which he has raised so many notable varieties. Ruby Tips, a pretty pink, semi-double variety; Mrs. Geo. Monro, double white; Snowdrift, Empress of Colwall, rosy-mauve; Maid of Athens, double, blue; Margaret Ballard, rosy-mauve; and Grey Lady, were notable varieties in his collection.

Mr. R. J. Case, Taunton, showed border flowers, including Coreopsis auriculata superba, Lysimachia longifolia, Aster King George and Gaillardia grandiflora. Numerous varieties of Zonal Pelargoniums were interspersed amongst the border flowers.

Messrs. W. H. Rogers and Son, Southampton, displayed a big group of hardy flowers in which we noticed fine specimens of Campanula fenestrellata, Gentiana Farreri, Chrysogonum virginicum, Dianthus Emile Pari, Geum Borisii, Campanula muralis major and a host of other fine plants, with many dwarf shrubs and Conifers.

Messrs. H. J. Jones, Ltd., had a most imposing group of Michaelmas Daisies and Helianthus Monarch, adjoining their fine group of Dahlias. Effective in arrangement, first-class in quality, and representative of the choicest sorts, this beautiful exhibit was greatly admired.

Messrs. Hewitt, Solihull, showed border flowers in variety in association with choice Dahlias. Their Delphiniums, such as Rose Marie, George Cochrane, Mrs. Townley Parker and Norah Ferguson, were especially good.

Mr. William Yandell, Maidenhead, had a large and representative collection of border Chrysanthemums.

Michaelmas Daisies, Phloxes, Pentstemons and Dahlias were shown by Mr. John Forbes, Hawick. The Pentstemons, in which this grower specialises, were outstandingly good, and included such sorts as Lambert Middleton, James Gibson, Mrs. Grenander, Col. Joicey and Mrs. Shakespeare.

Mr. Amos Perry, Enfield, had one of the most noteworthy exhibits of hardy flowers, arranged as a floor group. It was an ensemble of beautiful border flowers, including choice sorts of Michaelmas Daisies, Tritomas, Liatris pycnostachys, Lilium Henryi, Artemisia lactiflora, Pentstemon White Bedder, Pyrethrum Aegeon and Cimicifuga Simplex. The inclusion of choice hardy Ferns added much interest, and the edging of dwarf Conifers and Ericas was in good taste.

Messrs. Bakers, Wolverhampton, arranged, against a background of Michaelmas Daisies, a choice assortment of border flowers, such as Kniphofias H. G. Mills, Verbascum Cotswold Beauty, Phlox Light of Codsall, Sidalceas, Delphinium King George and Liatris pycnostachys.

Messrs. Geo. Jackman and Son, Woking, arranged border flowers as an edging to their fine exhibit of Clematis. Michaelmas Daisy Kate Bloomfield is a gorgeous variety of rosy-pink colouring.

An exhibit wholly of Michaelmas Daisies was shown by Mr. T. Bones, Cheshunt, who has raised many noted varieties of these autumn flowers. Ultramarine is a fine blue variety, and Queen Mary of the Amellus type, exceptionally large and of rich lavender blue. Barr's Pink, Maid of Athens, Freedom, Kate Bloomfield, Anita Ballard and Royal Blue are others of high merit.

Mr. William Sydenham, Derby, showed many beautiful varieties of Michaelmas Daisies.

Mr. Gavin Jones, Letchworth, showed a floor group of hardy border flowers, and adjoining this group was a collection from Messrs. Waterer, Sons and Crisp, Twyford, Berkshire.

Messrs. M. Prichard and Sons, Christchurch, had a varied and beautiful assortment of border flowers, in which the rich golden Helianthus Monarch showed conspicuously. The beautiful Pyrethrum James Kelway, Aster Amellus Rudolph Goethe, Poterium obtusum, Kniphofia Mount Etna, Rudbeckia, The Pilot and Solidago Golden Wings are other flowers of special merit.

Messrs. J. Cheal and Sons, Crawley, arranged a bank of hardy flowers next to their group of shrubs and trees. Actinomeris virginica is a pretty Composite, like a miniature golden Rudbeckia. Aster Royal Blue and the very large flowered King George were conspicuous in this group.

Messrs. Carliles Nurseries, Loddon, filled a large table with hardy border flowers. Aster hybridus luteus, Kniphofia aloides erecta, Aster Royal Blue, Salvia nemorosa and Coreopsis auriculata are a few of the choicer plants shown by this firm.

Mr. G. G. Whitelegg had vases of Asters, Gladioli, Aster linosyris and pans of alpines.

Mr. Amos Perry displayed a collection of aquatics similar to the one for which he was awarded a Gold Medal at the fortnightly meeting on August 30.

The bowls of aquatics with fish were greatly interesting. Valisneria spiralis, Cabomba sp. Ludwigia palustris, Elodea densa, E. crispa, Callitriche autumnale, Cerrasophyllum demersum, Cabomba caroliniana, Myrophyllum spicatum and Potamageton densus are a few of the more interesting water "weeds" in the bowls.

Mr. G. Reuthe, Keston, had a variety of hardy border flowers and alpines, the most conspicuous of which was a box of Colchicums in variety, C. speciosum atro-rubens, C. s. album, C. autumnale album, C. Bornmulleri and Crocus speciosus. He had two pans of Gentiana sino-ornata in flower.

Messrs. Barr and Sons exhibited a group of their beautiful Michaelmas Daisy Barr's Pink, with a few plants of Schizanthus Mrs. Hegarty and Coreopsis auriculata superba.

Messrs. E. F. Fairbairn and Sons, Carlisle, showed choice border Phloxes, of which the more notable sorts were The King, Vivid, Mrs. J. C. Maude, Border Gem, Europe, Lord French and Fairbairn's Triumph.

Mr. Baldwin Pinney, Shipbourne, near Tonbridge, Kent, exhibited varieties of Violets. Mr. J. J. Kettle, also showed varieties of Violets.

Mr. James Macdonald's grass garden was quite a dainty garden with small beds of Ericas and Berberis mixed with beautiful grasses; raised bank at either end were planted with Eulalia saccharifera, Panicum plicatum, Eragrostis elegans, Eulalia japonica, Zebrina and the Golden Pampas Grass.

Messrs. Isaac House and Son, Westbury-on-Trym, showed Aster lutens, Kniphofias and other border flowers in association with Scabiosa caucasica.

Messrs. Skelton and Kirby, Pirbright, showed a good selection of Michaelmas Daisies, as well as Gentiana acaulis, G. sino-ornata and Cyclamen neapolitanum.

Messrs. W. Wells and Co., Merstham, showed some of the choicer sorts of Michaelmas Daisies, such as Margaret Ballard, Royal Blue, Mrs. George Monro, Barr's Pink, Little Boy Blue and King of the Belgians.

Mr. F. Gullick, Salisbury, showed Michaelmas Daisies, Tritomas, Chrysanthemums, Pyrethrums, Helenium Riverton Beauty, Artemisia lactiflora and other border flowers.

Mr. F. W. Rich, Worcester, showed Michaelmas Daisies and Solidago Ballardi. The last is larger-flowered than the old Golden Rod, and a fine bright yellow. The new Margaret Ballard Aster is a fine double, rosy-mauve variety.

Messrs. Daniel Bros., Norwich, showed Montbretia His Majesty next to their exhibit of Roses.

Messrs. Bowell and Skarratt, Cheltenham, had, in the forefront of their exhibit of herbaceous plants, a pool planted with Water-Lilies.

Messrs. G. Gibson and Co., Bedale, had a floor group of hardy border flowers, surmounted by grand spikes of Tritoma Mount Etna.

Messrs. Blackmore and Langdon had late spikes of Delphiniums of such varieties as Monarch of All, Lady Gwendolen, Robert Cox, Pannonia, Phyllis and Mrs. H. Kaye. Messrs. Wilson and Agar, Reading, showed Michaelmas Daisies, Chrysanthemums, Dahlias and other hardy flowers.

Hardy border flowers were also shown by the Chalk Hill Nurseries, Reading; Messrs. Harkness and Sons, Bedale; Messrs. Low and Gibson; Mr. G. W. Miller, Wisbech; Messrs. W. Cutbush and Son, Highgate; Mr. F. G. Wood, Ashtead; Messrs. W. H. Simpson, and Sons, Birmingham; Central Garden Supplies, Ltd.; Messrs. Rich and Cooling, Bath; The Orpington Nurseries, Ltd., Messrs. R. Neal and Sons, Sevenoaks, Messrs. Small and Co., 28, Lime Street, London. Messrs. Rich and Cooling, Bath, and Mr. W. Kemp, Enfield.

Rock Gardens and Alpines.

A very pleasing rock-garden was arranged by Mr. W. E. T. Ingwersen, Sharpthorne, Sussex, in which we noticed fine specimens of Crocus speciosum album, Campanula Miranda, Crassula sarocaulis, Gentiana sino-ornata, and many dwarf Conifers including Juniperus communis compressa, Abies Remontii and Pinus montanus Mughus.

Adjoining this exhibit was a similar one by the Backhouse Nurseries, Ltd., York. This was a well arranged and effectively planted rockery, in which Cyclamen hederaefolium album, Campanula garganica Payne's variety, Rosa pumila, Colchicum speciosum album, Sternbergia lutea, and a large number of dwarf Conifers were used to good effect.

Messrs. Maxwell and Beale, Broadstone, showed alpines on a rockery arranged on tabling. Such rock-garden plants as Gentiana acaulis, Erigeron Asa Gray, Erica vagans Lyonesse, Aster acris nanus and Papaver alpinum were disposed amongst stone work and in one corner was a big colony of Colchicum autumnale in variety.

Mr. Clarence Elliott, Stevenage, used old Westmoreland stone in a rock-garden exhibit on a table and planted it effectively with Colchicums, Fuchsia pumila, Nerembergia rivularis, Gentiana Farreri, Polygonum affine and other late alpines with dwarf Pines and Junipers.

Mr. H. Hemsley, Crawley, had a rockery planted with a variety of Alpines and, at the back, varieties of his choice strain of Sidalcea. Geum Borisii, Campanula rotundiflora hybrida, Saussurea alpina, Tunica Saxifraga alba plena and many other pretty late-flowering Alpines were planted at appropriate spots amongst the stones.

The Misses K. and E. Hopkins, Coulsdon, put up a small rockery furnished with late-flowering Alpines.

A rock garden was also exhibited by Mr. Ernest Dixon, Putney.

Hardy Trees and Shrubs.

There were many collections of miscellaneous hardy trees and shrubs and, while autumn colouring was not so prominent a feature as last year, there were many shrubs with brilliant fruits and an appreciable number of species and varieties in flower. Messrs. Hillier and Sons had a large exhibit in which they placed large examples of Quercus coccinea splendens in autumn colour, Pistacia chinensis, with its graceful, Fern-like foliage beautifully tinted, Acer palmatum atropurpureum, Viburnum Sieboldi, Vitis Coignettiae and Vitis sinensis with coloured foliage.

An admirable group was also arranged by Messrs. Wallace and Co., who placed three tall specimens of Golden Cypress along the centre and included Japanese Maples, Rosa Moyesii bearing bright hips, various Clematis, Lilium auratum and Autumn Crocuses. Conifers were freely shown by Messrs. Fletcher Brothers, who also grouped Cotoneaster Simonsii, C. horizontalis, Berberis Wilsonae and Pyracantha Lelandii in full fruit. Messrs. Hollamby's Nurseries had tall examples of various Vitises, especially V. Coignettiae, shrubby Spiraeas, Cornuses and Ericas.

Many well-flowered Clematis were grouped by Messrs. G. Jackman and Sons, whose varieties included Nellie Moser, Belle Nantaise, Gipsy Queen, Lady Northcliffe, The President, Otto Froebel and Mrs. Hope. They also had a collection of Michaelmas Daisies. A pretty little group was displayed by Messrs. Maxwell and Beale, who arranged various Ericas and Menziesia polifolia. Mr. H. Hemsley had a well-coloured specimen of Enkianthus campanulatus and Ampelopsis Veitchii, with Symphoricarpus racemosus, dwarf Conifers and Veronicas. Messrs. L. R. Russell, Ltd., grouped Clematis with Vitises, Cotoneasters and other shrubs.

Japanese Maples, ornamental Vines, Cotoneaster rugosa Henryi, Pyrus Eleyi, Desmodium penduliferum, Salvia coerulea and various Conifers were shown by Messrs A. Charlton and Sons. On the staging, the Orpington Nurseries set out a good variety of shapely little Conifers of the type valued for the rock garden, and near by Messrs. Stewart and Son showed Cotoneasters and Veronicas. Messrs. R. Neal and Sons had small Conifers, Ericas and other shrubs, while Miss Gladys House exhibited miniature gardens.

In a flower group, Messrs. J. Cheal and Sons arranged Ceanothus Gloire de Versailles, C. Marie Simon, C. Americanus, Menziesia polifolia, Escallonia floribunda, Hydrangeas, Japanese Maples and Conifers. Mr. G. G. Whitelegg had a goodly group of shapely Conifers, chiefly of species and varieties of Pinus Cupressus, Picea and Taxus, and a few berried shrubs. Mr. R. C. Notcutt displayed Pyrus Eleyi, Stransvesia Davidiana, Berberis subcauliaulata, Ceanothus Gloire de Versailles, C. Albert Pettet, Abelia rupestris and Pernettya hybrids.

Several excellent specimens of Euonymus yedoensis bearing its beautiful fruits were included in their group by Messrs. Waterer, Sons and Crisp. They also showed Berberis Unique, B. Thunbergii, B. lucida, Actinidia chinensis, Conifers and Vitises. Mr. G. Reuthe had many Rhododendrons which, though not in flower, illustrated great value for their luxuriant foliage. Those with the largest leaves were R. praestans, R. pentamerum, R. grande and R. Elizabethae magnificum. He also showed flowering sprays of Hoheria popunea, Cyrilla racemiflora, Magnolia grandiflora, Lapageria rosea, Ericas and shrubby Veronicas. Messrs. Robert Green, Ltd., had a good collection of Bay trees in various forms.

Messrs. R. Neal and Sons, Ltd., Sevenoaks, exhibited Ericas, Conifers, Hypericum patulum, Pernettias, and other shrubs in the gallery.

Fruit and Vegetable Committee.

Present: Mr. A. H. Pearson (chairman), Mr. P. C. M. Veitch, Mr. W. Lobjoit, Mr. E. A. Bunyard, Mr. W. F. Giles, Mr. E. Neal, Mr. H. Prince, Mr. J. Wilson, Mr. E. A. Laxton, Mr. W. H. Divers, Mr. A. W. Metcalfe, Mr. Geo. F. Tinley, and Mr. A. N. Rawes (Secretary).

A seedling Plum of the Monarch type was shown by Mr. G. W. Layley, Hallfoot Farm, Beenham, Reading. It was recommended that the variety be included in the trial of commercial fruits at Wisley.

Fruits.

Mr. J. C. Allgrove, Langley, Slough, showed a magnificent collection of hardy fruits, including Apples, Pears and Plums. The quality of the fruits was exceptionally high, but the tabling was too narrow to admit of displaying them to the best advantage. Of Apples there were grand specimens of Cox's Orange Pippin, Allington Pippin, Rival. Charles Ross, Blue Pearmain, Mabbot's Pearmain, S. T. Wright, Worcester Pearmain, Ellison's Orange, King Harry King of the Pippins and Ben's Red.

Messrs. Edward J. Parsons and Co., Worcester, also displayed choice fruits of Apples, Pears and Plums, with several pretty baskets of berried sprays of Berberis for relief. They had fine Apples of such sorts as Newton Wonder, Lord Suffield, Royal Russet, Warner's King, James Grieve, Annie Elizabeth and Charles Ross. Messrs. Stuart Low and Co. showed pot Fig trees of the White Ischia variety.

The Barham Nurseries, Ltd., had exceptionally big and choice Apples. The outstanding variety was Charles Eyre, a big golden Apple of the Royal Jubilee type. Others of merit were Ribston Pippin, Rival, Bramley's Seedling, Egremont Russet, and Charles Ross.

Messrs. G. Bunyard and Co., Ltd., displayed a variety of choice hardy fruits, also small berried Grapes grown in a cold house. This well-arranged exhibit contained a good selection of both culinary and dessert Apples, also choice Pears, Plums, Crabs and Nuts. A central stand of hanging baskets contained Ben's Red Apples of intense colouring. The Plums were exceptionally good,

A. P. Brandt, Esq., Bletchingley, Surrey (gr. Mr. J. W. Barks), exhibited eighteen fine bunches of Grape Golden Queen which obtained the R.H.S. First Class Certificate in 1873. It was raised from Alicante crossed with Ferdinand de Lesseps. At the back was a row of pretty foliage plants. Messrs. W. Seabrook and Sons, Chelmsford, showed splendid Apples of varieties specially suited to commercial growers.

Mr. J. J. Kettle, showed fruiting sprays of Raspberries. Peaches Salway and Lady Palmerston were shown well by Mr. A. T. Goodwin, Roseholme, Maidstone.

Vegetables.

Messrs. Thynne and Son, Dundee, exhibited some forty varieties of Potatos, including the new early non-immune variety, The Baron, which gained a Gold Medal at Ormskirk in 1927.

Awards by The Council.

Cups.

The Coronation Cup, offered for the most meritorious group in the show, was awarded to Messrs. Blackmore and Langdon, for a group of Begonias.

The Wigan Cup, offered for the best exhibit of Roses, was awarded to Messrs. S. McGredy and Son.

Silver Cup.—To Messrs. Allwood Bros., for Carnations; to Messrs. J. Peed and Son, for greenhouse plants; to Messrs. Dickson and Robinson, for Dahlias; to Mr. J. B. Riding, for Dahlias; to Messrs. W. Treseder, Ltd., for Dahlias; to Mr. J. C. Allgrove, for fruit; to the Barnham Nurseries, Ltd., for fruit; to Messrs. J. Cheal and Sons, Ltd., for shrubs; to Messrs. Hillier and Sons, for trees and shrubs; to Mr. G. Prince, for Roses; and to Mr. T. Robinson, for Roses.

Medals.

Gold Medal.—To Messrs. C. Engelmann, Ltd., for Carnations; to Messrs. Blackmore and Langdon, for Begonias; to Messrs. Dobbie and Co., for Dahlias; to Messrs. G. Bunyard and Co., Ltd., for fruit; and to Messrs. S. McGredy and Son, for Roses.

Silver-Gilt Flora Medal.—To Messrs. Austin and McAslan, for Gladioli; to Messrs. Stuart Low and Co., for Orchids; to Messrs. Stuart Low and Co., for Carnations; to Messrs. James Carter and Co., for greenhouse flowering plants; to Messrs. Sutton and Sons, for Begonias; to Messrs. Jarman and Co., for Dahlias; to Mr. H. J. Jones, for Dahlias; to Mr. G. Reuthe, for trees and shrubs; to Messrs. Chaplin Bros., Ltd., for Roses; to Messrs. Alex. Dickson and Sons, for Roses; to Messrs. G. Jackman and Son, for Clematis and herbaceous plants; to Messrs. L. R. Russell, Ltd., for Clematis, hardy climbers and miscellaneous plants; and to Messrs. R. Wallace and Co., Ltd., for shrubs, bulbous plants and hardy flowers.

Silver-Gilt Banksian Medal.—To Mr. S. Smith, for Cacti, succulents and miniature gardens to Messrs. Carter Page and Co., for Dahlias; to Messrs. J. Stredwick and Son, for Dahlias; to Mr. J. T. West, for Dahlias; to Mr. H. Woolman, for Dahlias; to Messrs. A. Charlton and Sons, for trees and shrubs; to Messrs. Maxwell and Beale, for a Heath garden; to Mr. R. C. Notcutt, for shrubs; to Messrs. J. Waterer, Sons and Crisp, Ltd., for shrubs and Conifers; to Messrs. B. R. Cant and Sons, Ltd., for Roses; to Mr. E. J. Hicks, for Roses; to Mr. J. H. Pemberton, for Roses; to Messrs. D. Prior and Sons, Ltd., for Roses; to Messrs. Waterer, Sons and Crisp, for Roses; to Mr. W. Wells, Junr., for Michaelmas Daisies and other herbaceous plants; to King's Acre Nurseries, for Dahlias and Chrysanthemums; to Mr. Amos Perry, for herbaceous plants; to Messrs. Bakers, Ltd., for herbaceous plants; and to Messrs. M. Prichard and Sons, for herbaceous plants.

Silver Flora Medal.—.—To Mr. Ernest Ballard, for Michaelmas Daisies; to Mr. J. W. Forsyth, for Chrysanthemums; to Messrs. K. Luxford and Co., for Chrysanthemums; to Mr. W. Yandell, for Chrysanthemums and Violas; to Messrs. R. Winder, Ltd., for Dahlias; to Messrs. J. Cheal and Sons, Ltd., for Dahlias; to Messrs. R. Green, Ltd., for Bay trees; to Mr. J. Klinkert, for topiary; to Messrs. W. Easlea and Sons, for Roses; to Mr. J. Mattock, for Roses; to Messrs. A. Warner and Son, for Roses; to Messrs. W. Cutbush and Son, for a mixed group of Dahlias and Pentstemons; to Messrs. Isaac House and Son, for Scabious, Kniphofias and herbaceous plants; to Messrs. Harkness and Sons, for herbaceous plants; to Messrs. B. Ladhams, Ltd., for Lobelias and other herbaceous plants; to Messrs. J. Waterer, Sons and Crisp, for herbaceous plants; to Mr. W. E. T. Ingwerson for rock garden plants and dwarf Conifers; and to Mr. James Macdonald for a lawn garden.

Silver Hogg Medal.—To Mr. A. P. Brandt, for Grapes; and to Mr. E. J. Parsons, for fruit.

Silver Knightian Medal.—To Messrs. Thyne and Son, for Potatos.

Silver Banksian Medal.—To Messrs. R. H. Bath, Ltd., for Gladioli; to Messrs. R. and G. Cuthbert, for Streptocarpus and Crassulas; to Messrs. Stuart Low and Co., for greenhouse plants; to Mr. C. Turner, for Dahlias; to Messrs. Fletcher Bros., for shrubs and Conifers; to the Hollamby's Nurseries, for trees and shrubs; to Messrs. D. Stewart and Son, for shrubs; to Messrs. Frank Cant and Co., for roses; to Mr. Amos Perry, for aquatic plants; to the Orpington Nurseries Co., for a mixed group of Gladioli and Michaelmas Daisies; to Mr. H. J. Jones, for Michaelmas Daises and Helianthuses; and to Messrs. Clarence Elliott, Ltd, for a rock garden.

Flora Medal.—To Mr. T. Bones, for Michaelmas Daisies; to Mr. W. Sydenham, for Michaelmas Daisies; to Mr. H. Clarke, for Dahlias; to Mr. H. Hemsley, for trees and shrubs; to Dowty's Rosery, for Roses; to Messrs. Wood and Ingram, for Roses; to the Chalk Hill Nurseries, for herbaceous plants; to Messrs. W. H. Rogers and Son, Ltd., for a group of alpine plants, dwarf shrubs and herbaceous plants; and to Messrs. E. F. Fairbairn and Sons, for Phloxes.

Banksian Medal.—To the Orpington Nurseries Co., for dwarf Conifers and shrubs; to the Backhouse Nurseries, for a mixed group of dwarf shrubs and alpine plants; to Mr. F. G. Wood, for a rock garden; to Mr. W. F. Gullick, for herbaceous and bulbous plants; to Messrs. Hewitt and Co., Ltd., for a group of Delphiniums, Dahlias and herbaceous plants; to Messrs. Wilson and Agar, for Dahlias, Gladioli and Chrysanthemums; to Messrs. W. Wood and Son, Ltd., for herbaceous plants; to Mr. F. Rich, for herbaceous plants; to Mr. H. Woolman, for Chrysanthemums and Dahlias; to Messrs. Bowell and Skarratt, for herbaceous plants; to Messrs. G. Gibson and Co., for herbaceous plants; and to Mr. Gavin Jones, for herbaceous plants.

Hogg Medal.—To Messrs. S. Low and Co., for Figs; to Messrs. W. M. Seabrook and Sons Ltd., for fruit.

ROYAL CALEDONIAN HORTICULTURAL.

September 14 and 15.—Notwithstanding the very unfavourable season, the autumn show of this Society, which was held in the Waverley Market, Edinburgh, on the above dates, was an exceptionally fine one, and was a pleasant surprise to most people who visited it. The fruit classes were not, as was to be expected, so well filled as usual, but the exhibits forthcoming were quite up to the average, and in the case of the twelve dishes of Apples set up by Mr. Charles Webster, Gordon Castle Gardens—in the class for orchard house fruit—no finer fruits of the kind have ever been seen at these shows. The cut flowers were particularly good, most of the classes being well filled, while the vegetables were of a high standard. The trade exhibits were also numerous and of high merit. The total entries in the competitive classes were considerably in excess of those of last year, which were then the highest since pre-war years. The National Association of Allotment Holders again held its annual show in conjunction with the Society's show, and there also the exhibits were of a high standard. The show was formally declared open by Mrs. Wauchope, of Niddrie.

Pot Plants.

For a table of tuberous Begonias, six feet by five feet, Mrs. Dennistoun Mitchell, Carwood, Biggar (gr. Mr. J. Lyall), was awarded the first prize, and George Dun, Esq., Eastmount, Galashiels (gr. Mr. A. Aitken), was placed second.

The following were the first prize winners in the other classes for pot plants open to gardeners and amateurs: Three stove or greenhouse plants, George Dun, Esq.; two Coleus, Mrs. Beveridge, Beechwood, Kirkcaldy (gr. Mr. P. Reid); three foliage plants, Mr. W. H. Shepherd, Edinburgh; four plants for table decoration, Mrs. Mackinnon, Auchmore, Killin (gr. Mr. J. Easson); four Streptocarpuses, Mrs. Sellars, Drylaw House, Edinburgh (gr. Mr. W. Galloway); two tuberous Begonias (single and double), D. J. W. Dundas, Esq., Woodhouselee, Midlothian (gr. Mr. A. Lauder); two Nephrolepis, Mr. W. H. Shepherd, Edinburgh; six dwarf hardy Ferns, Mr. A. Oliver, Hawick; three exotic Ferns, Mrs. Lumgair, Rosalie, Hawick (gr. Mr. W. Black); two Zonal Pelargoniums, Mrs. M. Mitchell, Gilmerton; three scented-leaved Pelargoniums, Mrs. M. Mitchell; two Fuchsias, Royal Victoria Trust, Liberton (gr. Mr. J. Douglas); two pots of Lilium, Mrs. Dennistoun Mitchell; one pot of Vallota purpurea, Major C. R. Gordon, Threave House, Castle Douglas (gr. Mr. J. Duff); three pots of Chrysanthemums, Mr. Claude Jenkins, Cambuslang; two Heliotropes, Mrs. Sellars.

In the classes confined to amateurs, Mrs. M. Mitchell excelled for two greenhouse plants, one tuberous-rooted Begonia (single), one Zonal Pelargonium, and one flowering plant; Mr. W. H. Shepherd, Edinburgh, for one foliage plant; Mr. J. Arnot, Corstorphine, for one tuberous-rooted Begonia (double); Mr. D. Lonie, Gilmerton, for four hardy Ferns and one Fuchsia; Mr. R. Kerr, Edinburgh, for one pot of Lilium, and Mr. Claude Jenkins, Cambuslang, for one pot of Chrysanthemums.

Roses.

In the open classes, Messrs. Wheatcroft Brothers, Gedling, were placed first for six baskets of decorative Roses, and Messrs. J. Fairley and Son, Cairneyhill, Fife, second. Messrs. Fairley also excelled for six vases of "Cluster" Roses. For thirty-six Rose blooms in not fewer than twenty-four varieties, and not more than two of any variety, Messrs. Adam and Carmyle, Aberdeen, took first place, Messrs. D. and W. Croll, Dundee, being second. Messrs. T. Smith and Sons, Stranraer, excelled for twelve blooms of new Roses, distinct varieties, introduced in 1925 and after. In the classes for twelve Roses in the various colours, Messrs. D. and W. Croll excelled for twelve red or crimson blooms; Messrs. Adam and Carmyle for twelve pink, and Mr. W. Ferguson, Dunfermline, for twelve white and twelve yellow varieties respectively.

In the gardeners' and amateurs' classes, Major R. E. Davies, Glenlaggan, Kirkcudbright (gr. Mr. F. Penfold), excelled for a collection of garden and decorative Roses, not fewer than twelve varieties, arranged for decorative effect on a table five feet square. He also excelled for twelve vases of Roses in twelve distinct varieties, and for twenty-four blooms in not fewer than eighteen varieties, and not more than two blooms of one variety. The Earl of Haddington, Mellerstain, Berwickshire (gr. Mr. W. A. Baldwin), was placed first for four vases of Roses, for three vases of Cluster Roses, and for one vase respectively of yellow and red or crimson Roses. Mr. J. Paterson, Lamington, Lanark, excelled for a vase of pink Roses, and Major A. D. Thomson, Nenthorn, Kelso (gr. Mr. W. Wilson), for a vase of a white variety.

In the classes confined to amateurs, Mr. J. Paterson, Lamington, excelled for twelve blooms, not fewer than six varieties, and not more than two blooms of any variety, one vase of a rambler variety, one vase of six blooms, and one vase of any pink Rose.

Dahlias and Sweet Peas.

In the open classes Messrs. M. Campbell and Sons, High Blantyre, excelled for six vases of Cactus Dahlias. Mr. J. Nisbet, Busby, excelled for three vases of the same flower, and Mr. W. Heatly, Galashiels, excelled for one vase in the section confined to amateurs. In the classes for Collerettes, Mr. C. Jenkins, Cambuslang, excelled in the gardeners' and amateurs' classes for six vases, and Mr. R. Grant, Bowness, for three vases in the class confined to amateurs. In the remaining classes for gardeners and amateurs, Mr. Jenkins excelled for four vases of Pompons, Mr. J. Paterson, Chirnside, for three vases of Show blooms, and Mr. W. Lowrie, Bowness, for three vases of single varieties. The *Gardening Illustrated* Medal for the best exhibit in the Dahlia section was awarded to Mr. Claude Jenkins for his six vases of Collerettes.

For twelve vases of Sweet Peas, open to gardeners and amateurs, Mr. J. A. Grigor, The Woodlands, Banff, was placed first; and for six vases of these flowers Mr. E. E. Dixon, Dumfries, excelled. Mr. Dixon also excelled for three vases in the class confined to amateurs. In the open, single-vase classes, Mr. Grigor excelled for crimson, cream and orange-scarlet varieties; F. R. B. Elliot, Esq., Clifton Park, Kelso (gr. Mr. J. Darling), for a pink variety; and Sir W. H. May, Bughtrigg, Coldstream (gr. Mr. J. Loan), for lavender and any other coloured varieties.

Carnations and Chrysanthemums.

Mr. W. Aitchison, Thurston Gardens, East Lothian, obtained the first prize for six vases of perpetual-flowering Carnations, and Mr. A. Walker, Jedburgh, excelled for four vases of Border Carnations and Picotees.

In the open classes for Chrysanthemums, Mr. T. Neilson, Rutherglen, was awarded the first prize and the Scottish Challenge Cup for a display of single and double flowers on a table ten feet by five feet, decorated with Ferns, etc., and Mr. R. Grant, Bowness, was placed second. In the other open class, Mr. Jenkins excelled for six vases of early-flowering varieties. In the classes for gardeners and amateurs, Mr. J. Nisbet, Busby, obtained the first prize for eight vases of early-flowering varieties, and also for one vase of white, one vase of yellow, one vase of crimson or bronze, and one vase of any other variety. Mr. J. Stevenson, Melrose, excelled for one vase of single early-flowering varieties, whilst in the only class confined to amateurs, for three vases of early-flowering varieties, Mr. W. Bishop, Inverkeithing, was successful.

Gladioli, Pansies and Violas.

In the open class for twenty-four spikes of Gladioli, Messrs. G. Mair and Sons, Prestwick, were placed first, and Mr. D. Whitelaw, Laurencekirk, second. In the classes for gardeners and amateurs, Mr. Whitelaw excelled for twelve spikes, and Mr. J. M. Carruthers, Corstophine, for six vases of varieties of Primulinus. Mr. Whitelaw also excelled for six spikes in the class confined to amateurs.

In the Pansy and Viola classes, for gardeners and amateurs, Mr. A. Frater, Kirkliston, excelled for twenty-four blooms of Fancy Pansies, in not fewer than eighteen varieties, for twelve Show Pansies, and for twenty-four blooms of Violas in not fewer than eighteen varieties. Mr. H. Robertson, Kelty, Fife, excelled for twelve sprays of Violas, and also for twelve blooms of Violas. Mr. A. Frater also excelled for twelve Fancy Pansies in the class confined to amateurs.

Herbaceous and Other Flowers.

In the gardeners' and amateurs' classes, the Earl of Haddington, Mellerstain, Gordon (gr. Mr. W. A. Baldwin), led for twelve vases of hardy herbaceous flowers, and also for six vases of Phloxes and three vases of Montbretia. Mrs. Reid, Thomanean, Milnathort (gr. J. Mr. Pearson), was placed first for six vases of flowers from the open border; Major C. R. Gordon, for Michaelmas Daisies; Mr. J. Richardson, Ford, Midlothian, for eighteen vases of cut flowers from the open, on a space of six feet by five feet, and for six vases of Pentstemons; Lady Dundas, of Arniston, Gorebridge (gr. Mr. R. Mackenzie), for six vases of Antirrhinums; Mr. H. Mason, Davidsons Mains, Edinburgh, for three vases of Scabiosa caucasica; Mr. W. Bishop, Inverkeithing, for three vases of French Marigolds; Mr. W. T. Landreth, Coldstream, for two vases African Marigolds; A. Currie, Esq., Holylee, Walkerburn (gr. Mr. W. Redpath), for two vases of Single Asters; Mr. C. Jenkins, for two vases double Asters; Mrs. Askew Robertson, Ladykirk, Norham (gr. Mr. G. Little), for three vases of Stocks; Mr. J. Stevenson, Melrose, for eight vases of annuals; Mr. A. Currie, Newmills, for six blooms of double Begonias, and Mr. F. Cowie, Helensburgh, for a basket of autumn foliage and leaves. In the classes confined to amateurs, Mr. W. F. Landreth excelled for six vases of hardy herbaceous flowers, and four vases of hardy and half-hardy annuals, while Mr. W. R. Brownlee, Duns, excelled for two vases of Phloxes.

Decorative Classes.

These classes were open to all competitors, and the first prize for a decorated dinner table ten feet by five feet, was awarded to Macpherson Smith, Esq., Prestonfield, Edinburgh (gr. Mr. W. Lamb). Mr. J. Mackenzie, Lochend Dunbar, was placed second, and Mr. E. E. Dixon, Dumfries, third. Miss Sophia Johnston, Edinburgh, excelled for a shower bouquet of Roses, and Miss G. Bremner, Edinburgh, for a shower bouquet of Carnations. Messrs. J. Fairley and Son were placed first for a bowl of Sweet Peas, and Mr. T. M. Whitehead, Selkirk, for a bowl of Carnations.

Fruit.

The Earl of Haddington, Yester, Gifford (gr. Mr. A. M'Bean), was the only entrant for a table of nine dishes of fruit, decorated, and was awarded the first prize of £5. The fruits shown were: Muscat of Alexandria and Gros Maroc (two bunches of each) Grapes, two dishes of Marguerite Marillat Pear, Princess of Wales and Bellegarde Peaches, Pineapple Nectarine and James Grieve Apple.

Grapes.

As was the case last year, the Earl of Strathmore, Glamis Castle, and the Earl of Balfour, K.T., Whittingehame, were the only entrants for eight bunches of Grapes, not fewer than four varieties, and not more than two bunches of a variety, and the first prize of £4 and a gold badge, with the Thomson Challenge Trophy, was awarded to the Earl of Strathmore (gr. Mr. D. M'Innes), who, having won it for the third time, now becomes the owner of the trophy. The points awarded to the Earl of Strathmore's bunches were :—

		Max. Points.	Points Awarded
1.	Muscat of Alexandria ...	10 ...	9
2.	" " ...	10 ...	9
3.	Mrs. Pince	9 ...	8
4.	"	9 ...	8
5.	Alicante	8 ...	6½
6.	"	8 ...	6½
7.	Black Hamburgh	9 ...	6½
8.	Gros Maroc	8 ...	5½
		71	59

The bunches shown by the Earl of Balfour (gr. Mr. G. F. Anderson), were two of Muscat of Alexandria, two of Directeur Tisserand, two of Appley Towers and two of Alicante, and the points awarded were fifty-five out of a possible sixty-eight.

In the class for four bunches, at least two varieties, and not more than two bunches of a variety, the Earl of Haddington was placed first, with 30½ points out of a possible 36; the Earl of Mar and Kellie, Alloa House, Alloa (gr. Mr. W. J. Buchanan), was second, with 27½ points out of 36; and Sir E. Wills, Meggernie, Glenlyon (gr. Mr. P. M'Onie), third, with 26½ out of 38. The Earl of Strathmore also excelled for two bunches of Muscat of Alexandria, and for two bunches of Alicante. The Earl of Mar and Kellie excelled for one bunch of Muscat of Alexandria, the Earl of Moray, Donibristle, Fife (gr. Mr. J. M'Kinna), for three bunches of Black Hamburgh; the Earl of Balfour for one bunch of Appley Towers, two bunches of any other black Grape, with Directeur Tisserand; and one bunch for bloom, with Appley Towers. The Earl of Haddington excelled for one bunch of Gros Colmar and one bunch of Madresfield Court; R. B. Ballantyne, Esq., Ascogbank House, Bute (gr. Mr. H. Begg), for one bunch of Alicante, and Major C. R. Gordon, for two bunches of any other white Grape.

Other Fruits.

For a collection of nine dishes of hardy fruit grown in the open, Sir R. D. Moncrieffe, Moncrieff House, Bridge of Earn (gr. Mr. A. W. M'Lean), was placed first. The Duke of Richmond and Gordon, Gordon Castle, Morayshire (gr. Mr. C. Webster), excelled with a very finely finished lot of orchard-house-grown Apples in a class consisting of twelve dishes, in at least nine varieties, five fruits of each. The other entrant in the class, the Earl of Balfour, was placed second. For a collection of Apples grown in Scotland, twelve varieties, five of each, the Hon. Mrs. Askew Robertson, Ladykirk, Norham (gr. Mr. G. Little), led, and for a similar collection of six varieties, Sir R. D. Moncrieffe was placed first.

In the single dish classes for Apples grown in Scotland, Viscount Churchill, Langlee, Galashiels (gr. Mr. J. Cochrane), excelled for Charles Ross; Major C. R. Gordon, for Newton Wonder, Worcester Pearmain and Grenadier; J. K. Spittal, Esq., Roundelwood, Crieff (gr. Mr. J. M'Kinnie), for Irish Peach; J. J. Bell Irving, Esq., Mackerston, Kelso (gr. Mr. R. Auldjo), for James Grieve, Golden Spuire and Stirling Castle, and six dessert Apples fit for table. Mr. G. Ormiston, Musselburgh, led for Ecklinville Seedling; Admiral Sir W. H. May, Bughtrig, Coldstream (gr. Mr. J. Loan), for Lane's Prince Albert and Rev. W. Wilks; Mr. T. Nicol, Earlston, for Peasgood's Nonesuch; Mr. J. P. Reid, Averlady, for Lord Derby; Mr. R. Kerr, Edinburgh, for Lord Suffield; Hon. Mrs. Askew Robertson, for Warner's King; Mrs. M'Kinnon, Auchmore, Killin (gr. Mr. J. Easson), for Bramley's Seedling; Sir R. Usher, Norton, Ratha (gr. Mr. A. Willsher), for any other dessert Apple grown in Scotland, and the Earl of Haddington, Mellerstain, Gordon (gr. Mr. W. A. Baldwin), for any other culinary Apple.

In the class for amateurs, Mr. R. Kerr, Edinburgh, excelled for six cooking Apples, and Mr. W. Graham, Kirkfieldbank, Lanark, for six dessert Apples.

For Pears grown in Scotland, Mrs. Askew Robertson led for the collection of six varieties, and also for six fruits of Doyenné du Comice. Mr. J. Mackenzie, Lochend, Dunbar, was first for Louise Bonne of Jersey, Souvenir de Congres and Williams's Bon Chrétien. Admiral Sir W. H. May excelled for Conference; Mr. J. P. Reid, Aberlady, for Durondeau; Captain Pelham Burn, Invereil, Dirleton (gr. Mr. J. Law), for Jargonelle; and Sir R. D. Moncrieffe, for Pitmaston Duchess. Admiral May obtained the first prize for a collection of dessert Plums, and the Earl of Balfour for a collection of culinary Plums. The Earl of Balfour also excelled for twelve purple Plums, twelve Gage Plums, six Peaches and six Nectarines. The Duke of Richmond and Gordon, Fochabers (gr. Mr. C. Webster), excelled for twelve red Plums, and the Earl of Mar and Kellie for two Melons (green or white and scarlet) and also for one Melon. R. W. E. Cowper, Esq., Gogar House, Edinburgh, was first for Gooseberries; the Earl of Haddington Mellerstain, for Black and Red Currants, Mr. P. Landreth for White Currants; Mr. J. Russell, Newton Mearns, for Loganberries; Mr. J. W. Macdonald, Wooden, Kelso, for Morello Cherries; and Admiral May, for Raspberries.

Vegetables.

Mr. John Gray, Uddingston, secured first honour for a collection of vegetables, consisting of twelve dishes, with very fine samples, for which he obtained 61½ points out of a possible 74; Mr. J. H. Bell, Bothwell, took second place with 55½ points out of a possible 74. For a display consisting of nine dishes, for which competitors in the previous class were not eligible to enter, Mr. C. F. D. Gray, Uddingston, excelled with 47 points out of 61. Mr. D. A. Hill, St. Boswells, was second with 45 points out of a possible 60. Mr. J. Gray also excelled for five tubers of Arran Comrade Potato, White Celery and Leeks. Mr. C. F. D. Gray also excelled for six long Beet, and Mr. Hill for six Parsnips. A. Currie, Esq., Holylee, Walkerburn (gr. Mr. W. Redpath), excelled for eight varieties of Potatos, also for four varieties, and for five tubers of The Bishop and Great Scot respectively. R. W. E. Cowper, Esq., Gogar House, Edinburgh, excelled for five tubers of Golden Wonder; J. J. Bell Irving, Esq., Mackerston, Kelso (gr. R. Auldjo), for five tubers of Midlothian Early, twelve Onions and six Golden Ball Turnips; Mr. W. Forrest, Biggar, for five tubers of Kerr's Pink Potato, two pots of Parsley, four Cabbages and four Cabbage Lettuce.

The Gardeners' Chronicle Medal was awarded to Mr. J. Gray, Uddingston, for his display of vegetables (Class No. 187).

Non-Competitive Exhibits.

The following awards were made to Trade exhibits.—

Gold Medal.—To Messrs. Dicksons and Co., Edinburgh, for Roses; Messrs. Austin and M'Aslan, Glasgow, for vegetables, etc.; Messrs. Dobbie and Co., Edinburgh, for Dahlias and Sweet Peas; Messrs. Storrie and Storrie, Glencarse, for pot fruits, etc.; Messrs. Thyne and Son, Dundee, for fruits, flowers, etc.; Messrs. John Forbes (Hawick), Ltd., for Phloxes and other herbaceous plants; Messrs. C. Engelmann, Ltd., Saffron Waldon, for Carnations; Messrs. Allwood Bros., Haywards Heath, for hybrid Pinks and Carnations; Messrs. E. F. Fairbairn and Sons, Carlisle, for Phloxes; Messrs. I. House and Son, Bristol, for Scabious and Kniphofia; and to Mr. R. Lawrie, Carnwath, for Begonias.

Silver-gilt Medal.—To Messrs. Bannatyne and Jackson, Hamilton, for Dahlias and herbaceous plants; Messrs. Cunningham, Fraser and Co., Edinburgh, for shrubs; Mr. John Downie, Edinburgh, for herbaceous plants and fruit; Mr. W. Ferguson, Dunfermline, for Roses; Messrs. Laird and Dickson, Edinburgh, for a miniature rockery; Mr. T. Smith, Newry, for shrubs and herbaceous plants; Messrs. Tillie, Whyte and Benvie, Edinburgh, for a miniature garden, etc.; and to The Scottish Co-operative Wholesale Society, West Kilbride, for Roses, etc.

Silver Medal.—To Mr. Peter Aitken, Bathgate, for alpine and herbaceous plants; Messrs. Dicksons and Co., Edinburgh, for shrubs; Mr. A. Forrest, Kirknewton, for Pansies and Violas; Messrs. T. Methven and Sons, Edinburgh, for a miniature garden, etc.; Mr. M. Rae, Biggar, for Begonias; Messrs. Wheatcroft Bros., Nottingham, for Roses; and to Mrs. Watt, Edinburgh, for decorated tables.

Bronze Medal.—Dr. Badger, Penicuik, for Schizanthus; Messrs. A. Lister and Son, Rothesay, for Dahlias, etc.; Messrs. John Wilson, Ltd., Hereford, for Onions; Mr. G. M'Glashan, Gosford, for Dahlias; Rt. Reverend the Hon. B. J. Plunket, Clontarf, Dublin, for Lobelia cardinalis.

An Award of Merit was granted to Rose Princess Elizabeth, exhibited by Messrs. Wheatcroft Bros., Gedling, Notts.

Cultural Certificates were awarded to The Rt. Rev. the Hon. B. J. Plunket for Lobelia cardinalis, and to Messrs. John Wilson, Ltd., Hereford, for Onions.

GUILDFORD AND DISTRICT ROSE.

Formed only a few months ago, this Society has already a membership of 220 spread over a wide area. Under the guidance of its President, Mr. William Harvey, a well-known Rosarian, supported by an enthusiastic committee, the first show was held in the grounds of Weir House, Guildford, on Wednesday, September 14. Mr. Courtney Page, Hon. Secretary to the N.R.S., paid the new Society a signal compliment by breaking into his holiday in order to perform the opening ceremony. In declaring the show open, he spoke of his admiration for the magnificent collection of Roses that had been brought together. For a Society started only three months ago it was, he said, simply marvellous.

Altogether the entries numbered 191, and in all classes competition was keen. The prize for the best bloom was awarded to Mrs. Alex. Lee for a specimen of Ruth, but this, curiously was but the second best for the best Rose was disqualified by late entry.

In the division open only to nurserymen, Messrs. D. Prior and Son, Colchester, won the Society's Gold Medal for a superb collection. Mr. H. Street, West Chobham, was awarded a Silver-gilt Medal, and Messrs. Bide and Son, Farnham, and Mr. J. H. Pemberton, Romford, Silver Medals.

The William Harvey Silver Challenge Cup, offered for the best display (not open to trade growers) was won by Mr. H. C. Turner, Woking; Mr. F. C. Stoop, Byfleet, was second, and Col. Younger, Guildford, third. The opening ceremony was preceded by a luncheon provided by the President at which Mr. Courtney Page was presented by Mrs. Harvey with a Certificate of Membership as the first Honorary Member.

GERMAN HORTICULTURAL.

The exhibition held by the German Horticultural Society, from August 21 to 28, in the Clou Concert Hall, in Berlin, was a gratifying success. The show was opened by Oberbürgermeister Böss with an interesting speech.

The exhibits chiefly consisted of Roses and hardy flowers (August 20 to 24), and Dahlias (August 25 to 28). In the first part of the programme the firms of Mathias Tantau and C. Voigt, both of Uetersen, excelled, but the most notable exhibitor of all was Mr. Viktor Teschendorff, of Dresden-Cossebaude, who showed beautiful groups of cut Roses, which included all the best and newest varieties. Among those showing hardy plants, the firms of Carl Förster, Bornim; Adolf Schmidt, Berlin; and the Gräflich Schwerinschen Staudenkulturen were the most prominent.

Gladioli were well shown by the firm of Pfitzer; a more prominent position might well have been given to this lovely exhibit, which kept fresh during the whole period of the show. The Dahlia Show brought some very fine groups, and the interest these aroused testified to the growing affection of the public for this flower. The three most outstanding firms in this section were Reichardt, of Mariendorf; Severin, of Kremmen, and Schwiglewski, of Karow; the Gräflich Schwerinschen Staudenkulturen also had a superb group, including not only the best of existing Dahlias, but also a number of new seedlings. Among the new plants shown was a variety of the Primula obconica section, from the firm of Fasbender, with blooms of unusual size and remarkably strong growth; Mr. Viktor Teschendorff showed his two new Polyantha Roses, Goldlachs and Locarno; and the firm of Breuer, Lichtenrade, showed a Chrysanthemum novelty named Frau Amalie Brandt.

ANSWERS TO CORRESPONDENTS.

Antirrhinums Diseased.—*K. M. R.* The flower stems of the Antirrhinums are attacked in places by the fungus Botrytis, which, by girdling the stems, causes the tops to wither. If you intend to retain the plants the trouble would be reduced by the removal of affected stems.

Black and Yellow Fly.—*W. P.* The fly you send is a small female of the Giant Sawfly (Sirex gigas) commonly, and therefore, of course, erroneously, called the Giant Tailed Wasp or Wood Wasp. It is in no sense a wasp, and the long spike projecting from its hinder extremity is not a sting, but a sheath covering the saws with which it pierces holes in the wood of Pines and Firs in which to deposit its eggs. The whitish, maggot-like larvae devour the wood, in which they live for months. The male is coloured similarly to the female, but is without a spike. There are two other species whose life history is similar, viz., S. juvencus and S. noetilis, but the females of both these are steel-blue, though the males are similarly coloured to that of S. gigas. S. juvencus is very rare in Britain.

Grapes Failing to Colour Properly.—*J. R.* Your Black Hamburgh Grapes appear to be suffering more from overcropping and a lack of potash in the soil than from any other cause. Apply two ounces of sulphate of potash to the square yard when top-dressing the border, and again when the bunches are swelling. Alicante is a more vigorous variety and will finish better under identical treatment than Black Hamburgh. Give the latter more generous treatment, avoid overcropping, and the berries will be larger and the Grapes a better colour.

Horse Chestnut Tree Shedding its Leaves.—*M. K.* No fungus likely to be the cause of the leaf fall was found on the leaves sent. The trouble may be in the branches from which the leaves came, or it may even be due to some unsatisfactory conditions at the roots.

Names of Fruit.—*J. R. G.* 1, Warner's King; 2, Wyken Pippin; 3, Bramley's Seedling; 4, Roi d'Angleterre; 5, Mere de Menage; 6, Dumelow's Seedling (syn. Wellington); 7, Scarlet Nonpareil; 8, Lane's Prince Albert; 9, Tower of Glammis; 10, English Codlin; 11 and 12, Castle Major; 13, not fully grown, probably Northern Greening; 14, Blenheim Pippin; 15, Radford Beauty.

Names of Plants.—*F. P.* 1, Spiraea Anthony Waterer; 3, Berberis vulgaris var.; 7, Potentilla fruticosa; 8, Ligustrum ovalifolium var. foliis aureis; 9, Genista aetnensis; 20, Spiraea canescens; 21, Berberis subcaulialata; 22, Calycanthus floridus; 25, Kerria japonica var. variegata.—*J.* 1 and 2, varieties of Cupressus Lawsoniana; 3, Abies Nordmanniana; 4, Picea orientalis; 5, missing; 6, Cupressus pisifera var. plumosa 7, C. Lawsoniana var. filifera.—*L. S.* The Cupressus is Juniperus communis var. fastigiata; Escallonia Philippiana; Cotoneaster microphylla.

Rose and Raspberry.—*Anxious.* The small pieces of Rose and Raspberry sent afford no clue as to why the leaves are yellow. A dressing of farmyard manure might effect a change. We do not undertake to analyse soil for our readers; if you wish to ascertain its nature you should send a sample to the Advisory Chemist, University College of North Wales, Bangor, who would, no doubt, analyse it for you at a small fee.

Communications Received.—W. Y.—H. M.—F. W. T.—W. D.—C. W. N.—Reader.—N. S.—R. H. J.—A. G.—G. H. C.—W. J. F.—T. W. S.—F. C.

SCHEDULES RECEIVED.

Holland (Lincs.) County Potato Show.—Exhibition to be held in the Spalding Motor Company's Garage, Spalding, on Thursday, October 27.—Secretary, Mr. J. C. Wallace, The Agricultural Institute, Kirton.

Highgate and District Chrysanthemum Society.—Fortieth exhibition to be held in the Highgate Hall on Wednesday and Thursday, November 2 and 3.—Secretary, Mr. W. Kiy, 18, Carlingford Road, Hampstead, N.W.3.

MARKETS.

COVENT GARDEN, Tuesday, September 27th, 1927.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz.	10 0	12 0
—elegans	10 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	42 0
Asparagus plumosus	12 0	18 0
—Sprengeri	12 0	18 0
Aspidistra, green	6 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus	12 0	15 0
Cacti, per tray 12's, 15's	5 0	7 0
Chrysanthemums, 48's, per doz.—		
—pink	18 0	21 0
—yellow	12 0	18 0
—bronze	15 0	18 0
—white	12 0	18 0
Crotons, doz.	30 0	45 0
Cyrtomiums	10 0	25 0
Erica gracilis, 48's, per doz.	27 0	30 0
— — 60's, doz.	12 0	15 0
— mixed, 72's, per doz.	8 0	9 0
—nivalis, 48's, per doz.	27 0	30 0
— — 60's, doz.	12 0	15 0
Nephrolepis in variety	12 0	18 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	18 0
Pteris, in variety	10 0	15 0
—large, 60's	5 0	6 0
—small	4 0	5 0
—72's, per tray of 15's	2 6	3 0
Solanums, 48's, per doz.	15 0	18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum decorum, doz., bun.	8 0	9 0
—cuneatum, per doz. bun.	6 0	8 0
Arums (Richardia), per doz. blooms	6 0	7 0
Asparagus plumosus, per bun., long trails, 6's	2 0	2 6
med. sprays	1 6	2 6
short „	0 9	1 3
—Sprengeri, bun. long sprays	2 0	2 6
med. „	1 0	1 6
short „	0 6	1 9
Asters, white, per doz. bun.	5 0	7 0
—coloured, per doz. bun.	5 0	6 0
—single, coloured, per doz. bun.	3 6	4 6
Carnations, per doz. blooms	2 6	4 6
Chrysanthemum Sanctity, per doz. blooms	3 0	4 0
—Mrs. J. Pearson, per doz. bun.	10 0	15 0
—white Duchess, per doz. blooms	4 0	6 0
—yellow, per doz. blooms	2 6	5 0
—bronze, per doz. blooms	2 6	5 0
—spray, pink, per doz. bun.	12 0	15 0
—spray yellow, per doz. bun.	12 0	15 0
—spray white, per doz. bun.	9 0	15 0
Cornflower, blue, per doz. bun.	2 0	2 6
Croton leaves, per doz.	1 9	2 6
Daisies, Shasta, large, doz. bun.	2 6	3 0
Fern, French, per doz. bun.	10 0	12 0
Forget-me-not, per doz. bun.	9 0	12 0
Gardenias, per doz. blooms	4 0	6 0
Gladiolus, giant varieties, per doz. spikes—		
—pink shades	1 6	2 0
—scarlet	1 6	2 0
—white	1 6	2 0
Gypsophila paniculata, double, per doz. bun.	18 0	24 0
Heather, white, per doz. bun.	6 0	9 0
Lapagerias, per doz. blooms	3 6	4 0
Lilium auratum, per doz. blooms	4 0	5 0
—speciosum album, per bun.	3 6	4 6
—short, per doz.	3 6	4 0
—rubrum, long, per bun.	3 6	4 0
—short, per doz.	2 0	2 6
—longiflorum, long, per doz.	2 0	2 6
—short, doz. blooms	2 6	3 0
Lily-of-the-Valley, per doz. bun.	30 0	36 0
Marigolds, per doz. bun.	3 0	4 0
Michaelmas Daisy King George, per doz. bun.	6 0	9 0
Myrtle, green, per doz. bun.	1 6	2 0
Orchids, per doz.		
—Cattleyas	36 0	48 0
Physalis, per doz. bun.	18 0	24 0
Roses, per doz. blooms—		
—Columbia	3 0	4 0
—Richmond	1 6	3 0
—Madame Butterfly	2 0	4 0
—Golden Ophelia	2 0	3 6
—Mrs. Aaron Ward	1 0	1 6
—Roselandia	2 6	4 6
—Madame Abel Chatenay	1 6	2 0
—Hoosier Beauty	2 6	4 0
—Liberty	1 6	3 0
—Molly Sharman Crawford	2 6	3 6
—Premier	—	3 0
Scabiosa caucasica, per doz. bun.	4 0	5 0
Smilax, per doz. trails	3 6	4 6
Statice sinuata, mauve, per doz. bun.	6 0	10 0
Stock, per doz. bun.—		
—double, white	9 0	12 0
— —mauve	9 0	12 0
Sweet Sultans, white, per doz. bun.	3 0	4 0
—mauve, per doz.	3 0	4 0
Violets, per doz. bun.	3 0	5 0

Remarks.—Business has again become more brisk in the pot plant department. Pot-grown Chrysanthemums have been in good demand, but at present the supplies are much below the requirements. Ericas are now in great demand and consignments of E. nivalis and E. gracilis in forty-eight-size pots are expected this week; these varieties are now obtainable in sixties and thumb pots. A few Solanums were on sale last week, those being the first arrivals this season. Foliage plants in various sizes are also in good demand. Chrysanthemums have now become the most prominent feature in the cut flower market; more varieties are offered amongst the disbudded blooms. White, bronze and yellow sorts are the best in bunch stuff and prices still remain firm for best quality blooms. Carnations are gradually becoming firmer in price, and so are Roses, the varieties Madame Butterfly, Golden Ophelia, Molly Crawford, Roselandia and Richmond, being very fine in quality. Carnations vary in price from 2/6 to 6/- per dozen blooms, and special kinds 7/- per dozen. Consignments of Lilium longiflorum are ample for present requirements, but both white and pink varieties of L. speciosum are very limited in quantity. Amongst outdoor blooms Michaelmas Daisies, including Aster Amellus King George and a few Gladioli are the soundest in this class. White and coloured Asters and also single varieties are arriving in fairly large quantities, but the majority of these blooms have been damaged by the unfavourable weather conditions. Arums (Richardias) show a little improvement in quality, and more blooms have been offered during the past week. Single Violets have been arriving in better condition during the past few days, the cooler weather being more suitable for the transit of these blooms.

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Aubergines, per doz.	2 0	3 0
Beets	4 0	6 0
Cabbage, per doz.	1 0	1 6
Carrots, per bag	4 0	5 0
Cucumbers, doz.	4 0	5 0
—Flats, 36's, 42's	8 0	14 0
French Endive, per doz.	2 6	3 0
—Batavia, per doz.	2 6	3 0
Guernsey Beans, per lb.	0 9	1 0
Leeks, per doz.	1 6	2 0
Lettuce, round, per doz.	0 9	1 6
—long, per score	1 0	2 0
Mint, per doz.	1 6	2 0
Marrows, per tally	5 0	6 0
Mushrooms—		
—cups	3 0	4 0
—broilers	1 6	2 6
—Field	1 0	1 6
Onions—		
Egyptian	11 0	12 6
—Dutch	8 0	9 6
—Spanish	12 0	14 0
Parsnips, cwt.	4 0	5 0
Peas, per bushel	10 0	14 0
Potatos—		
English	3 6	6 0
Radishes, per doz.	1 0	2 0
Tomatos, English—		
New crop	6 6	7 0
Old crop—		
—pink	4 0	5 0
—pink and white	4 0	5 0
—white	3 0	3 6
—blue	3 0	3 6
—Guernsey	3 0	3 6
—Jersey	3 0	3 6
—Dutch	3 0	3 6
—St. Malo	2 0	3 0
Turnips, per cwt.	3 6	4 6

Remarks.—Although business in the market is still somewhat restricted, and in some departments even worse than that, but there has been, in others, a slight improvement. In the English Apple market supplies continue heavy, but there is a little more activity in the demand for first grade dessert varieties, and culinary sorts also are sharing in the movement. Apples from North America are plentiful and cheap. A moderate sprinkling of English Pears is available, and best sorts are selling moderately well. Pears from California are comparatively cheap. Hothouse fruits, such as Grapes, Peaches, Nectarines and Melons are in ample supply for the available demand, Grapes from Guernsey being on the cheap side. English Plums are practically finished for the year; a few late ones are selling freely, and, on the whole, Plums have done very well throughout their season. English Tomatos are a variable trade; the old crop is selling badly, but the few new crop Tomatos arriving are selling at better prices. Jersey growers are sending fairly heavy supplies, and this trade would feel the benefit of warmer weather. Cucumbers are rather more plentiful, but the demand is slow. Forced Mushrooms are selling steadily at high prices for best produce. Very few field Mushrooms are yet on the market and those that are marketed sell well. The vegetable section is quiet except for a few good Peas and some forced Beans from Guernsey, which are in good demand. Onions from Holland, Egypt and Spain are a fair trade. The Potato trade shows little change and promises to remain steady.

GLASGOW.

The tone of the cut flower market was firmer last week and a good business was transacted in Chrysanthemums at slightly dearer prices in most cases. Debutante realised from 1s. 6d. to 2s. for 6's; Pink Delight and No. 1 White, 1s. 4d. to 1s. 9d.; Phoebe, Harvester and Holicot Yellow, 1s. 3d. to 1s. 6d.; Amber Queen, 1s. to 1s. 3d.; Holicot Bronze, 1s. to 1s. 4d.; Alcalde, 2s. 6d. to 3s. for 12's; Phoenix, 2s. to 2s. 3d.; Cranford Yellow, 1s. 6d. to 2s. 6d.; Betty Spark, sprays, 10d. to 1s. per bunch; Phoenix, 9d. to 1s. and smaller stuff, 5d. to 8d. The value of other flowers showed little change either way. Carnations were worth from 2s. 6d. to 3s. per dozen; pink Roses, 3s. 6d. to 4s. per dozen; yellow Roses, 2s. to 3s.; red and white Roses, 1s. to 2s.; Liliums and Richardias made 2s. to 2s. 6d. per bunch; Calendula and Asters sold for 2d. to 4d. per bunch; Lily-of-the-Valley, 3s. to 3s. 6d.; Sweet Peas, 1d. to 3d.; Smilax, 1s. 6d. to 2s. and Asparagus foliage, 9d. to 1s.

In the fruit market Plums and Damsons, though plentiful, were slower to move. Scotch-grown Victoria Plums sold at 9d. to 1s. per lb.; Monarch and Prune Damsons, at 10s. to 12s. per sieve. Apples were dearer; Gravensteins realised 11s. to 14s. 6d. per case; York Imperial, 28s. to 39s. per barrel, and English cooking Apples (Lord Derby), 8s. per bushel; Block's Beurré Hardy Pears made 14s. 6d. per half-case. The prices of Sunkist Oranges were 28s. to 31s. per case; South African Oranges, 18s. Grape Fruits, 43s. to 45s.; and Pomegranates, 12s. 6d. Muscat Grapes fetched, 3s. 6d. to 4s. per lb.; Almeria Grapes, 15s. to 26s. per barrel; Bronze Melons, 8s. and Blackberries, 2s. 8d. per chip.

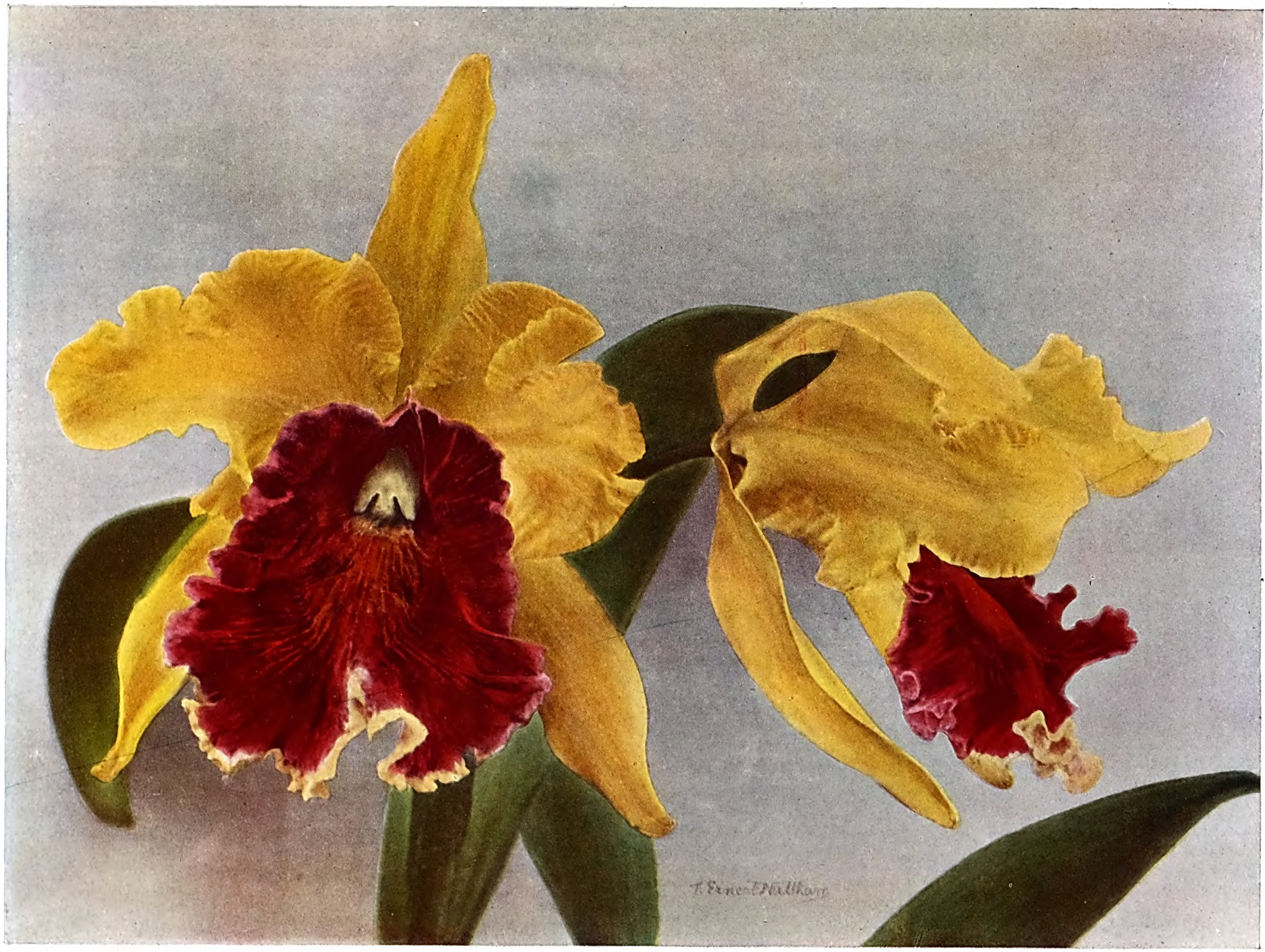
The business done in vegetables was quite featureless. Prices of Mushrooms advanced to 4s. 6d. per lb., but those of Tomatos were easier at 6d. to 8d. per lb. Chilies were worth 11s. 6d. per crate of 18lbs.; Cauliflowers realised 4s. to 5s. per dozen; Cucumbers, 2s. to 5s. per dozen; Lettuces, 1s. 9d. to 2s. 3d. per dozen; while French Beans made 4d. to 5d. per lb.

GARDENING APPOINTMENTS.

Mr. A. Wardle, for the past nine years gardener to Sir Richard Leighton, Bart., at Loton Park, Alberbury, near Shrewsbury, as gardener to Raoul H. Foa, Esq., Holywell Park, Wrotham, Kent.

Mr. F. W. Thurgood, for many years gardener and Orchid grower to the late H. T. Pitt, Esq., at Rosslyn, Stamford Hill, as Orchid grower to S. G. Brown, Esq., Brownlands, Shepperton.

Supplement to The GARDENERS' CHRONICLE Oct 8, 1927



T. Ernest Nullkam

LAELIO-CATTLEYA ORIFLAMME

THE
Gardeners' Chronicle
No. 2128.—*SATURDAY, OCTOBER* 8,. 1927.

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Coloured Supplement Plate.
Laelio-Cattleya Oriflamme.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 50·4°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 5, 10 a.m. Bar. 30·5°. Temp. 47°. Weather, Foggy.

A Summerless Summer.

The summer which has just departed—unwept, unhonoured and unsung—has taught the gardener many things. Chief of the lessons he has learned is that weather which depresses man brings vigour and floriferousness to all manner of plants. For surely, take it all in all, this sunless, sopping summer has never—at all events of recent years—been rivalled with repect to the brave show of garden flowers which, as though in defiance of rain and lowering skies, has graced gardens during the past six months. Weeds, no doubt, have thriven even more vigorously and, with the soil too wet for hoeing, have, in many gardens, piled up a heavy load of future troubles which will mature when the seeds begin to germinate. Fruits, too, have suffered, not perhaps, in profuseness, but certainly in flavour. Plums in some gardens are only just ripening, and those that the wasps have spared have, or seem to us to have, a savourless, woolly taste. Wasps have abounded and nests have been hard to find. The best trap which we have seen consists of a rectangular garden light raised slightly above a metal tray, with a sugared shelf half way up. A trace of formalin added to the sugary bait gives a quick quietus, and in such a trap thousands of these marauders may be taken within a week. Of garden crops, Celery, which suffered so much last year, has flourished exceedingly, and September Peas have been plentiful. Potatos, in spite of much leafy promise, are in many cases a poor crop and, need it be said, much infected with disease. More serious, perhaps, is the fact that where drainage is imperfect and soil on the heavy side, autumn digging may have to be delayed with serious effects on next year's crops. Good gardeners will not need to be told that with the persistent rains soils will already have lost a good share of their stores of nitrates, and that steps will have to be taken next spring to restore to the soil a sufficiency of that all important element, nitrogen. Yet, despite the deplorable weather with its attendant garden woes, borders at the present time are brilliant with the blue and rose and yellow of Asters, Heleniums and other autumnal plants. Berries, too, are beginning to light up the garden with their high tints—Sea Buckthorn, yellow-orange, varying in intensity of colour from plant to plant; Viburnum Henryi, rosy at present, turning to red hereafter; Viburnum rhytidophyllum—despised by some, but to our eye massive and magnificent—with great heads of ripening berries; and all the lovely tribe of Berberis with coral racemes. Strange, that in such a sunless year when Corn is still lying sodden in shock, that garden fruits should have been produced in such profusion. It would seem as though we are all inclined to infer from our own craving for sunshine that plants likewise need it, and in like intensity. This year would seem to prove the error of the inference. Diffuse and dull light with adequate temperature would seem to supply a fare of radiant energy sufficient for luxuriant and floriferous vegetation, albeit far short of the requirements of most of us. That it should be so, or even seem so, is a great solace and gives a pleasant recompense to the true gardener. He must, perforce, make many, albeit willing, sacrifices of his time. His seeing eye observes incessantly the mute but imperious claims which the garden makes on his energy. Though he gives willingly it is an added satisfaction to realise that when —as in this summer, he needed most brightness of colour to relieve gloom of sky and spirit—the garden has with unusual generosity requited him for his devotion. So in gratefulness and hope, the gardener will continue his avocation, confident that with the control of untoward circumstance which intensive cultivation means and gives, as he sows so he will reap, and be consoled to know that even this worst of summers cannot rob him altogether of the fruits of his labours.

Laelio-Cattleya Oriflamme.—The handsome Orchid that forms the subject of our Coloured Supplement Plate, was raised by Messrs. Armstrong and Brown by crossing Laelio-Cattleya Thyone with Cattleya Rex. The parents of L.-C. Thyone were Cattleya Dowiana aurea and L.-C. Ophir, while L.-C. Ophir was the result of crossing Cattleya Dowiana with Laelia xanthina. This history of descent indicates how L.-C. Oriflamme obtained the rich chrome-yellow colouring of its sepals and petals and the ruby colouring of its handsome labellum. The late Mr. Gurney Fowler used to grow L.-C. Oriflamme very finely.

Advertising Kew.—Notice boards have been affixed to the walls *outside* all the entrances to the Royal Botanic Gardens, Kew. These boards, painted a dark green and lettered in white, state the hours and charges of admission to the gardens, and there is a reversible panel which, on Tuesdays and Fridays, indicates that, on those days, the glasshouses and museums are also open from 10 a.m. to 11.45 a.m.

A Seed-drying Invention.—At the annual show of the High Wycombe and District Agricultural Association, which was held recently at Little Marlow, Bucks, the Marquis of Lincolnshire referred to an invention of considerable value to farmers in such a wet season as now experienced. When it was not possible to dry seed and corn crops out-of-doors they were brought into a barn and heaped around hot-water pipes, which, with the aid of an electric fan driving hot air through the seeds soon dried them. It was stated that, in this way, ten tons of Oats could be dried thoroughly in about eight hours. Lord Lincolnshire said that he believed the patent had been bought by the Government. It seems to us that, if further experiments support the initial experience, this idea should also be of great value to growers of garden seeds.

"Flowering Plants of South Africa."—No. 26 of Vol. VII of *The Flowering Plants of South Africa* contains illustrations and descriptions of ten plants, all of which belong to the great Mesembryanthemum family. These are Mesembryanthemum hamatum, which has a stout basal stem and descending branches, the latter bearing numerous bluish flowers; Haworthia tesselata, a low-growing, thick-leaved succulent plant, with long racemes of brown flowers; Mesembryanthemum stipulaceum, which was cultivated in England previous to 1732 and bears large, handsome, rose-purple flowers; Erepsia restiophilum, with elegant, purplish-pink flowers that remain open day and night (see *Gard. Chron.*, Vol. 78, p. 433); Crocanthus Thunbergii, a freely-branching plant, with clear yellow petals; Leipoldtia constricta, a small-leaved species, with rose-pink flowers; Cephalophyllum acutum (see *Gard. Chron.*, Vol. 78, p. 433), with thick, semi-terete leaves and large, solitary, deep rose-purple (almost crimson) flowers; Aridaria dela (see *Gard. Chron.*, Vol. 78, p. 433), one of the smaller species, with short leaves and rose-purple petals; Schonlandia Lehmannii, in which the large flowers have numerous pale lemon-yellow petals; and Leipoldtia plana, a pretty plant with decumbent branches, short fleshy leaves and bright rose flowers that open at mid-day.

Southend Gardeners' Outing.—Nearly one hundred members of the Southend Parks' Staff visited Cobham and Canterbury on the occasion of the annual outing. The Parks' Superintendent, Mr. Arthur Keeling, made all the necessary arrangements for the trip, including lunch at Canterbury, tea at Sittingbourne, and a smoking concert at Pitsea in the evening. At the conclusion of the lunch, the employees presented Mr. Keeling with a suit case, and Mrs. Keeling with a hand bag, as tokens of regard. Mr. Keeling is as popular with his staff as he is successful in the management of the parks and open spaces of Southend.

Lead in Garden Decoration.—The fact that lead is now coming into use again as a metal for garden ornaments, lamps, terrace boxes, etc., after a period of comparative disuse, is commented upon in an article in *The Builder* for September 30. Lead was extensively used for decorative purposes in the past; it has artistic possibilities as great as those of any other metal, with the added advantage that it is almost indestructible and does not require painting; in fact, its appearance improves with age. Again, in case of accidental breakage, not only can necessary repairs be easily and quickly carried out, but the repaired portions can be made as good and as sound as before the injury. No other metal lends itself so easily to artistic treatment; it may be cast to any desired pattern, it may also be worked by tools to the various shapes required, and ornamental features and details can be worked upon it in much the same manner as repoussé work is carried out in the case of harder metals, with greater effect. Architects of former times were fully aware that lead lent itself to decorative treatment, and a number of ornamental leaden rainwater heads and pipes are still to be seen, in an excellent state of preservation, on many famous buildings, such as those at Hampton Court (dated 1528) and St. John's College, Cambridge (dated 1599). The modern leadworker avoids the use of solder, which sometimes shows at the joints, by the method known as lead-burning, which, by fusing the metal itself for joining, renders the joint almost invisible. Leaden garden statuary possesses many advantages over stone, and even over bronze, and we are likely in the near future to see a considerable advance in the use of this metal for the purpose.

London Gardens Guild Lectures.—The following series of horticultural lectures, arranged by the London Gardens Guild, will be given in Prince Henry's Room, Fleet Street, E.C.4, commencing at 8 p.m., on each date :—October 13 : Mrs. Ada Slater, L.C.C., Ex-Mayor of Bermondsey, on "The Beautification of London"; October 27 : Mr. Alfred Dawkins, on "Bulb Cultivation"; November 10 : Mr. W. Williams, Superintendent of Avery Hill (L.C.C.) Botanic Gardens, on "School Gardens"; November 24 : Miss Kate Barratt, Principal of the Swanley Horticultural College, on "Gardening as a Career for Women"; December 8 : Mr. Hugh Main, B.Sc., on "Insect Friends and Foes of the Gardener"; January 5, 1928 : Mr. Archibald P. Balfour on "The Raising of New Varieties of Flowers"; January 19 : Mr. Arthur Osborn, Assistant Curator, Royal Botanic Gardens, Kew, on "Shrubs for Town Gardens"; February 2 : Mr. W. L. Lavender, on "Annuals for Cutting"; February 16 : Mr. H. J. Jones, on "Chrysanthemums"; March 1 : Mr. G. C. Taylor, B.Sc., Editor *The Garden*, on "New Plants"; March 15 : Mr. J. D. Stewart, Librarian, Bermondsey Public Libraries, on "Gardens in Literature"; and March 29 : Mr. W. L. Lavender on "Annuals for Garden Decoration." Non-members of the Guild may obtain admission tickets, 1s. per lecture, from the Secretary, Mr. R. Sudell, 124, Walworth Road, S.E.17.

Jubilee Exhibition at Leyden.—As mentioned in our issue of August 20 (p. 141) the Leyden branch of the Dutch Royal Horticultural Society is this year celebrating its fiftieth year of existence, and an important exhibition and other festivities were arranged to celebrate the anniversary. On September 13 the festival was officially opened in the reception room of the Town Hall, with a speech by Heer E. Th. Witte, the President of the Branch; there were also present the Burgomaster of Leyden, the General President of the Society, and many other distinguished persons. The exhibition occupied the large downstairs hall and also the gallery, and represented the finest products of the principal local growers and florists. Besides the exhibition, there was an official dinner at 6 o'clock on the evening of the opening day, followed by a musical entertainment and a display of classical dancing. The next morning a large meeting of members and friends took place, and the Burgomaster officially welcomed them to the Town Hall. The floral opera, "Bloemensproke" was a great success.

Horticultural Education Association. — The annual meeting and conference of this Association took place recently at the Swanley Horticultural College, at the kind invitation of the Principal, Dr. Kate Barratt, and there was a large attendance of members present. The latter were thoroughly interested in what they saw at Swanley, and visits were also paid to the Research Station at East Malling, where the various trials and experiments were explained by Mr. Grubb, in the unavoidable absence of Mr. Hatton. The opportunity of seeing Apple trees in a state of bearing that were worked on the selected stocks which have made East Malling famous was much appreciated. Another visit of an equally educational character was paid to the Fruit Packing and Canning Station at East Farleigh, at the kind invitation of Mr. Gregson, who explained the methods adopted at the station for the collecting, grading, packing and selling of growers' Apples. The social feature of the Conference was the Annual Dinner which was attended by Sir William Lobjoit, J.P., and Mr. Garrad, Agricultural Organiser under the Kent County Council. Not the least interesting and useful item in the proceedings was the conference at which Sir William Lobjoit presided, and papers on educational topics associated with horticulture were contributed by Dr. Kate Barratt and Mr. J. G. Murray. Amongst the members who took part in the discussion was Mr. F. J. Chittenden. Sir William Lobjoit was thanked for all he has done to further the interests of horticultural education and congratulated on the honour recently conferred upon him. It was generally agreed that the Conference was one of the most interesting and valuable held under the auspices of the Association.

Mr. J. May. — One of the old school of gardeners, Mr. J. May has now retired from active service, and is living with his son, who is gardener at Childwick Bury, St. Albans. So far back as 1861, Mr. J. May served under Mr. George Austen at Porthgwedden, Cornwall, and left those gardens to serve at Mereworth Castle, where he remained for seven years, before going to Messrs. James Veitch and Sons' nurseries. From Chelsea, where he worked in several different departments, he took up the position of foreman at Givon's Grove, Leatherhead. His next appointment was as foreman and decorator at Normanhurst Court, and one of his pleasantest recollections is that of decorating Lord Brassey's yacht, the Sunbeam, which was then becoming famous. Mr. May also used Marguerites for decorating the town house in London, and was probably the first to use these plants for this purpose. He left Normanhurst Court to become gardener at Northaw House, Potters Bar, where he served three employers, and his total period of service there amounted to thirty-six years. In the early part of his career at Northaw House, Mr. May became a very successful exhibitor, especially of vegetables, which he showed at the old South Kensington exhibitions and also at the Royal Aquarium, Westminster. Syon House Potato was a great favourite with him, and on one occasion when he exhibited this variety before the Royal Horticultural Society he was awarded a Silver Medal and First-Class Certificate. Northaw Prize Brussels Sprout and Chrysanthemum William Robinson were both introduced by Mr. May, whose name will be quite familiar to many of our older readers. Although eighty years of age, Mr. May still takes an active interest in all gardening matters and never misses reading *The Gardeners' Chronicle*. In August last—as notified in these pages—this grand old gardener and his wife celebrated their Golden Wedding.

MR. J. MAY.

Reversion in Black Currants.—Careful readers of *The Gardeners' Chronicle* have learned long since how to distinguish evidences of reversion in Black Currants—the general principle being the reduction of veins and teeth in the terminal lobe of a leaf, as compared with those of a normal leaf. Probably the first use of the term "reversion" was used in these pages during 1912, when "Southern Grower" and Mr. E. A. Bunyard drew attention to this trouble. In the current issue of the *Journal of Pomology and Horticultural Science*, Mr. J. Amos and Mr. R. G. Hatton, of East Malling, give a very comprehensive review of this disorder under the title of "Reversion in Black Currants," where they deal at considerable length with the symptoms and diagnosis of the disease, and illustrate the text with numerous reproductions from photographs. In the same issue Mr. T. Wallace discusses "Field Experiments on the Manuring of Gooseberry Bushes," and Mr. E. Ball contributes an interesting and helpful article on "The Time of Differentiation and the Subsequent Development of the Blossom Bud of the Plum"; he points out that "If it be known when the primordia of the flowers are laid down he (the practical horticulturist) may be able to intervene at the right time in order to influence the blossom bud production by pruning or manuring." The concluding article is a lengthy one by Mr. Richard le Pelley entitled "Studies on the Resistance of Apple to the Woolly Aphis."

Distribution of Surplus Bedding Plants in the London Parks.—The surplus bedding plants at the London County Council parks and gardens will be distributed to the public between the hours of 9 a.m. and 11 a.m., on Saturday, October 15. Persons desiring to participate in the distribution should make personal application to the officers-in-charge at the various parks or gardens. Plants will not be handed to children under the age of fourteen unless they present a note from their parents or teachers.

Medal for Royal Park Foreman.—His Majesty the King has been graciously pleased to confer upon Mr. John Linford, foreman at Greenwich Park, the Royal Victorian Medal (Silver) in recognition of his long service and good record in the Royal Parks. Mr. Linford joined the staff of Hyde Park in 1880 and was promoted to his present post in 1903. During his service of close on half-a-century, Mr. Linford has seen many changes in the Royal Parks, and has had varied and interesting experiences, and he is held in high esteem by all who know him. Sir Lionel Earle, Permanent Secretary of H.M. Office of Works, in presenting the Medal to Mr. Linford, congratulated him on his forty-seven years of good service and on the honour conferred upon him.

Mr. George F. Tinley.—After a long connection with *The Gardeners' Chronicle*, whereon, latterly, he held the position of Associate Editor, Mr. George F. Tinley has taken up the duties of Technical Editor of the *Fruit, Flower and Vegetable Trades Journal*. Mr. Tinley carries with him the good wishes of the Directors and Staff of *The Gardeners' Chronicle*.

Early Autumn Shows in Holland.—A successful horticultural exhibition was held recently at Doorn, in Holland. Three large tents were erected and one of these was warmed for the accommodation of tender plants, of which a good selection was sent. A "procession of flowers" was an added attraction on the third day of the show, on which day also the ex-Kaiser of Germany paid the exhibition a visit; he presented some handsome prizes for competition. On September 20 the Dutch Rose Society held its forty-seventh members' meeting in Amsterdam, Jhr. J. L. Mock in the chair. The Secretary, Heer E. J. Ludding, gave some encouraging figures in regard to membership, etc., of the Society, and of the success which had attended the exhibitions held during the year. The possibility was discussed of arranging a large Rose Show to take place in the Zoological Gardens at the Hague in July 1928, on the occasion of the Olympiad. An interesting exhibition of garden craft was held at the Hague recently, opened by Burgomaster W. W. van der Meulen, and arranged under the joint auspices of the local Art Circle and the Union of Dutch Landscape gardeners. As an instance of the fame Dutch gardeners enjoy outside their own country, one of the exhibits was a plan of a villa and garden, designed by Heer Brandes, in the Italian vine-growing district.

New Irish Free State Patents and Trade Marks Act.—Our contributors, Messrs. Rayner and Co., draw attention to the new situation which is created by the coming into force of the new Patents and Trade Marks Act in the Irish Free State on October 1, 1927. Previously, British Patents and Trade Marks have covered the whole of Ireland, but with the new Act in force they will automatically cease to function in the Irish Free State. It is, therefore, necessary, for all holders of British Patents and Trade Marks desiring to retain their protection in Southern Ireland, to "validate" their Patents and Trade Marks there. British Patents and Trade Marks will therefore be continued upon the Irish Register if a certificate of the Patent or Trade Mark is lodged in the Free State and renewal fees paid as in England, together with other conditions which are required. Should any of our readers desire more detailed information on this important subject, Messrs. Rayner and Co., 5, Chancery Lane, W.C.2, will be glad to supply it free of charge.

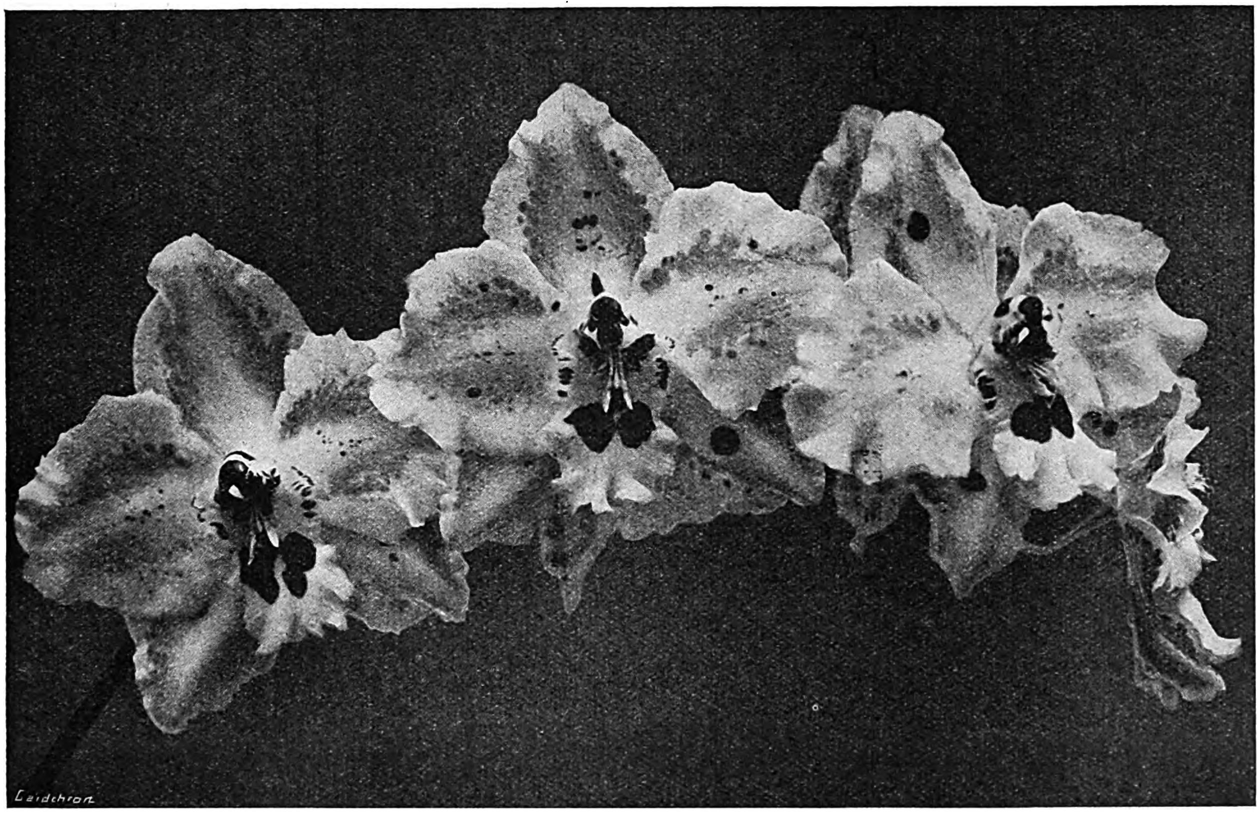

FIG. 126.—ODONTOGLOSSUM TOREADOR VAR. NUANCE.

R.H.S. Award of Merit, September 28. Flowers white, rose and brown. Shown by Messrs. Charlesworth and Co. (see p. 272, where the varietal name was omitted.)

Paeonies for Canadian Towns.—The daily papers announce that H.R.H. the Prince of Wales has instructed the Bank of Montreal to distribute Paeonies to the "cities, towns and villages of Canada as a memento of his visit." We imagine there is a mistake somewhere because of the enormous number of plants that would be required to provide even one only for each place within that vast Dominion.

New Sports Ground for Brighton.—The Brighton Town Council has under consideration a big scheme for providing a new sports ground at Coombe Farm, North Moulsecombe. The scheme, as presented by the Parks Superintendent, Mr. B. H. MacLaren, provides for a drive of one-and-a-quarter mile, to cost £905; four football grounds, £10,000; cricket ground, £3,000; twelve tennis courts, £1,800; two bowling greens, £2,000; and two pavilions, £2,000. Planting, water supply, and other requirements were estimated at £500, the complete estimate being £20,205. The Council has agreed to the immediate construction of the drive, four football pitches, a cricket ground and one pavilion.

Linnean Society's Meetings.—The general meetings of the Linnean Society of London for the 1927-1928 session will be held at Burlington House, Piccadilly, on November 3 and 17; December 1 and 15, 1927; January 5 and 19; February 2 and 16; March 1, 15 and 29; April 19 and May 3 and 24, 1928. The anniversary meeting is fixed for May 24. All the meetings commence at 5 p.m.

Covent Garden.—At the annual meeting of the Beecham Estates and Pills, Ltd., Sir Arthur Du Cros stated that in view of the great opposition raised the Directors had no alternative but to withdraw the Bill for the removal of Covent Garden Market to the Foundling Hospital site, they proposed therefore to modernise and extend the existing Market.

Appointments for the Ensuing Week.—Monday, October 10: Harrogate and District Horticultural Association's Meeting; National Chrysanthemum Society's Floral Committee meets; United Horticultural Benefit and Provident Society's meeting; Guildford and District Gardeners' Association's meeting. Tuesday, October 11: Royal Horticultural Society's Fruit Show; Jersey Gardeners' Society's meeting. Wednesday, October 12: Sheffield Chrysanthemum Society's meeting; Wimbledon Gardeners' Society's meeting. Friday, October 14: Royal Horticultural Society of Ireland meeting. Saturday, October 15: British Mycological Society's Foray with Essex Field Club at Epping Forest; Carnwath Chrysanthemum Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Heating Greenhouses with Gas.*—About two months ago, a gentleman in my neighbourhood asked me what was the most economical way of heating a greenhouse twelve feet by nine? An idea struck me, that if a small gas pipe could be brought underground from the house to the greenhouse, and then carried through the latter by piping, it would answer. This has been effected in the following cheap and easy manner. A wrought-iron box was made two feet square, with a door in it for opening to light the gas, as well as to give it air to burn with. This box was fixed in the brickwork, near the back of the east end of the house; from this a three-inch pipe fixed near the top of the iron box, was led to the other end of the house, from which, after rising six inches higher, it was conducted back again and passed through the end of the house into the open air, where, forming a bend, it ran up the outside in the shape of a chimney, with a little cap on the top to keep out the rain. The gentleman has had this contrivance lighted several times to show it to his friends, who are all so satisfied with it that they mean to have one put up for themselves; the burner is a fish-tail, which can be regulated so as to furnish much heat, or little. No lighting till required is needed; no burning and over-heating over night; and as to economy, when full on, it burns six feet of gas per hour. Instead of wrought-iron pipes, however, they should have been cast-iron, with saddles on them to hold water, but even in the present case a zinc saddle might be made to answer. I had the gas lighted when I went to inspect it, and in five minutes the pipe was hot at the other end of the house. This simple apparatus will not rest here; if gas can be applied upon a small scale it can upon a large one, and no doubt in time forcing houses will be warmed by it as well as Melon and Cucumber pits, large greenhouses, conservatories, and houses of all sorts. But I hear some one say, country places cannot have it; cannot gentlemen put up gas apparatuses? Only one fire would then be wanted to do the duty of the whole establishment. *James Cuthill, Camberwell.* [The difficulty with gas has always been that it burns the air, and also contaminates it by escape. It is indispensable that both these sources of evil should be most effectually guarded against—not a very easy thing to do, as is shown by the number of similar attempts which have ended in failure]. *Gard. Chron., October* 9, 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Calanthes.—The new pseudo-bulbs of the deciduous Calanthes are well advanced, and in order to obtain strong spikes and to secure clear, bright-coloured flowers, the plants should be afforded plenty of room, so that each individual may receive its due share of light. To this end it is advisable to grow them close to the roof-glass and to shade them no more than is absolutely necessary to prevent the sun's rays damaging the foliage or pseudo-bulbs. After the sunless summer, the grower should endeavour to get the growth of the plants consolidated so much as possible to prepare them for the coming winter. During the middle hours of the day, when the sun is bright, only a very thin shade is needed, but if exposed to the sunshine early in the morning and again in the afternoon, when there is no danger from scorching, the pseudo-bulbs will finish and ripen thoroughly. In the extra light and heat the plants will dry more quickly and will require plenty of water at the roots; liquid manure given alternately with clear water will be beneficial. Plants of the C. Regnieri section that produce their flowers in the spring are only about half way through their growing season and their development should be hastened so much as possible. Plants of the evergreen section, which include C. veratrifolia, C. Masuca, the hybrid C. Dominii and others, are also making their growths, and should be plentifully supplied with water. These plants may occasionally be seen growing vigorously in the ordinary plant stove-house, with other exotics. Plenty of light is good for them, but strong, direct sunshine will injure the foliage and check growth.

Seasonable Remarks.—The majority of Orchids are completing their season's development, and with so little sun the growth is of a soft, sappy nature, therefore every endeavour should be made to mature the growth before the winter sets in. Should the weather continue damp and unsettled, the management of Orchids should be modified as regards atmospheric moisture, it being a mistake to keep the air in any of the houses over-charged with moisture during such weather as we have recently experienced. More especially does this apply to inmates of the Cattleya, intermediate and cool houses. As regards the warmer houses, a certain amount of atmospheric moisture must be maintained to counteract the drying effects of artificial warmth and to prevent the spread of insect pests. Differences of locality and in the positions and structure of the houses must be taken into consideration, as these affect their capacity for holding atmospheric moisture. Everything depends on maintaining a proper balance of heat, light and air in the different departments. Even in the warmest division, atmospheric moisture can be overdone, especially during damp, cold weather, as an excess of moisture in any house has a tendency to lower the temperature considerably and make most unsuitable quarters for Orchids to thrive in.

Syringing and Spraying.—It is not good practice to continue syringing or spraying each time the air in the houses gets in the least dry, especially at this season, when numbers of the plants are finishing their growths and preparing for rest. To enable the new growths of those plants still active to finish and the new pseudo-bulbs to mature, each division should be allowed to become comparatively dry for a few hours during the middle of each day. At this season it is essential that plenty of light should reach such plants as Thunias, Cattleyas, Laelias, Vandas, Catasetums, Cycnoches, Mormodes, Dendrobium and other sun-loving plants, so that they may become well ripened and produce a full crop of flowers.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Mushrooms.—Continue to collect fresh manure from the stables daily and spread it thinly in a dry, open shed until sufficient has been obtained, after which the whole should be thrown together in a heap, and turned about every third day until it is in a suitable condition for use, when the beds should be formed. The manure should be made very firm in the beds. The Mushroom house should be made scrupulously clean and the walls and ceilings white-washed to destroy any insects that may be present. The beds need be only about fifteen inches in depth or even less will suffice if they are well made. Place a thermometer in the manure, and so soon as the heat declines to about 80° the bed should be spawned. The spawn should be obtained from a reliable source, broken into pieces about the size of a small pullet's egg and inserted about one-and-a half inch under the manure and about six inches apart. Afterwards the whole of the bed should be covered with about two inches of good, loamy soil and beaten very firmly. A layer of clean straw should then be spread over the bed. Mushrooms should appear in about six weeks from spawning. Do not use fire-heat for the present, as Mushrooms grow best without artificial heat, so long as the temperature remains at about 55°.

Brussels Sprouts.—This winter vegetable has grown very strongly this season owing to the abnormal amount of wet weather. Where the soil was enriched with much manure, growth is far too sappy and coarse. I advise that all yellow leaves be removed and a few others where growth is crowded, in order to allow as much air and light as possible to reach the young sprouts. I previously advised that the soil be made very firm before planting this vegetable. Where this was done and plenty of space allowed between each plant the results are satisfactory. Coarse, loose sprouts should be gathered for present use; this will prevent the firm buttons which are left from being overgrown by the others. If not already done, very strong plants should be loosely tied to stakes before the autumn gales break them down.

Cauliflowers and Autumn Broccoli.—A careful watch should be kept on these crops and the curds protected by drawing or tying the leaves carefully over them to protect the heads from frost. At the same time remove all caterpillars, which do irreparable damage to the plants.

Other Brassicas.—During fine weather, the various winter greens should be examined and all decayed leaves and weeds removed. The Dutch hoe should then be used between the rows wherever it is possible to do so.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

The Orchard House.—With the exception of a few late Plums and Pears, most of the trees in this house are cleared of their crops, and although the season has not been favourable for ripening the wood, they should be fit for removal to the open. For some months to come they may receive full benefit of rain, frost and plenty of water. All orchard house trees which have ripened their wood under glass will withstand any reasonable amount of frost, provided they remain dormant. Means should be taken to protect them from birds and keep worms out of the pots. When placed in position, the spaces between the pots should be packed with Bracken or litter to prevent frost from cracking the pots. Provided the soil is thoroughly moist, the trees will take little harm through the winter.

Potting.—The old balls of earth about the roots of late trees may be reduced and the trees re-potted in fresh compost. Considering that these trees will not be forced, and roots being plentiful, they will fruit well after severe handling. Young trees that were root-lifted last autumn, pinched and specially prepared for potting, may now be placed in receptacles varying from eight inches to ten inches in diameter. All stone fruits, Pears and Apples, should be grown in fairly heavy calcareous loam mixed with burnt earth, old lime rubble, crushed bones and soot, in preference to animal manure. The soil, provided it is in a fairly dry condition, should be made very firm in the pots by ramming. As the sap has scarcely ceased circulating, the roots should receive one good watering prior to plunging the trees in the open.

The Grape Room.—The annual cleansing of the Grape room should be done at once. Valuable use may be made of this room to ripen choice, early Pears, as the Apple room is generally too cold and possibly too damp to bring out the full flavour of these fruits.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Bulbs.—Continue to pot bulbs as they come to hand. Early Tulips may be grown in much smaller receptacles than those of the Darwin type, which require to be grown in seven-inch pots. Where quantities of cut flowers are in demand, bulbs are best grown in boxes, but care should be exercised against crowding them. Darwin Tulips will not submit to the same amount of forcing as other Tulips, but they may be grown successfully under glass when they are allowed to develop slowly. In my opinion, the Darwin Tulip is one of the most useful plants for supplying blooms in the early spring, and varieties of many shades of colour are available.

Cyclamens.—Where a large quantity of greenhouse Cyclamens are cultivated, some of the earlier plants may be placed in a lean-to house for preference, near the roof-glass. A minimum temperature of 50° should be maintained. Plants that are sending up their flower stems require very careful watering, and at no time must moisture be allowed to lodge among the leaves, otherwise the flower stalks will damp off. If the receptacles are well-filled with roots, the plants will be benefited by a small amount of concentrated fertiliser, care being taken when applying it that it does not come in contact with the centre of the corms. Freedom from insect pests is essential, and if any are present fumigate the plants on two or three occasions. This should free them from aphis and check the spread of mites.

Primula sinensis.—Where these plants have been grown in cold frames during the latter months they may be transferred to an airy house where a minimum temperature of 50° is maintained. Primulas, when approaching their flowering stage, resent a cold, damp atmosphere, therefore it is advisable to allow a little gentle heat to circulate through the water-pipes and admit air on all possible occasions. Do not crowd the plants, and when the receptacles are well-filled with roots they should be fed with liquid manure obtained from the cowsheds, alternated with weak soot-water. Primula malacoides should, for the present, receive as cool treatment as possible.

Gloxinias.—Continue to dry off these plants gradually; so soon as the foliage is ripe, the receptacles may be laid on their sides in a moderately warm place. Perhaps the most suitable temperature in which to winter the tubers is from 50° to 55°; if placed in a higher temperature growth will develop during the winter, while, on the other hand, a lower temperature would cause the tubers to rot. Young Gloxinias are hardly past their flowering; these will need very careful ripening, otherwise a good percentage of the little tubers will be lost during the winter; in fact, it is not wise to dry them off so drastically as the older plants, for this reason.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD, Wrotham Park, Barnet, Middlesex.

Propagation of Bush Fruits.—In gardens where bush fruits are in demand, a certain number of bushes should be propagated annually. Cuttings of Gooseberries and Currants may be made and inserted at this season of the year with very satisfactory results. Some gardeners select suitable shoots for propagation, tie them in bundles of about thirty in each, and heel them in until bad weather affords an opportunity for preparing them. Choose sturdy, well-ripened shoots, about fifteen inches long and take out the lower buds, except in the case of Black Currants. Cut the shoots just below a bud, if the cuttings are not furnished with a heel of old wood. Plant them firmly six inches asunder in rows made one foot apart.

Young Bushes.—Where it is decided to grub up old plantations and plant new, remove the old bushes and make preparations for replanting. The soil should be in good heart and tilled deeply. If the bushes are to be grown on the old site, trench the soil thoroughly and incorporate plenty of well-decayed manure, lime and other suitable materials with it. Plant half way between where the old bushes grew. Young, strong, healthy bushes should be planted quite six feet apart; if given good attention they will soon develop fine, fruitful heads, and bear heavy crops for many years. I have, at this season of the year, shifted quite large bushes of both Gooseberries and Currants, and all did remarkably well the following season.

Root-pruning.—A note should be made of all trees that require to be root-pruned. Soil consisting of rich loam with plenty of fibre and in a somewhat rough state should be mixed with a fair quantity of bone-meal, old mortar and charred earth. If the loam is of poor quality, add well-decayed manure to enrich it.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Preparations for Spring Bedding.—Towards the middle of the present month, even if frost does not intervene, many summer subjects may be cleared from the beds and borders to make room for bulbs and other subjects for a spring display. It is very important to get this work done so soon as possible so that Wallflowers and other plants of this description may be well-established before winter. Bulbous subjects should be planted so soon as possible, for however well they may be stored, they do not improve by being kept out of the ground longer than necessary. Bulbs may be used either alone or associated with other spring-flowering subjects, such as Wallflowers, Aubrietias, Myosotis, Iberis and Daisies, the dwarfer-growing plants being used for carpeting the surface of the beds. Where varieties of Narcissus are used for bedding purposes, they should be the first to receive attention, as they suffer more than the general run of bulbous plants by being kept out of the ground for any considerable length of time. Hyacinths are not so largely used for bedding as they were at one time, because of their stiff, formal habit; they have their value, however, and look best when not too closely planted, filling between them with some dwarf, carpeting plant. The early-flowering "Dutch" Tulips are best used either in beds of one variety or two sorts of contrasting or harmonising colours. This class of Tulip blooms early, which is a great advantage, for they permit the planting of summer bedding plants in good time. The taller-growing Darwin and Cottage Tulips may be mixed with dwarf-growing plants, such as Violas and Myosotis, and the tallest varieties with Wallflowers. Breeder Tulips flower at the same time as these last and they deserve to be more largely grown. When preparing beds for bulbs, the soil should be dusted with lime or basic slag; it is not advisable to add animal manure, but if it is considered necessary to do so, it should be well-decayed, and care should be taken to dig it well in so that it does not come in contact with the bulbs.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Old Fruit Trees.—The removal of old fruit trees which have served their day is often a difficult matter, but where these have deteriorated beyond hope of recovery they should be marked for removal at an early date, and even younger trees which have consistently refused to respond to all methods to make them fruit, should also be removed and their places filled by younger trees. In large establishments it is a usual custom to order a number of young fruit trees in advance of actual requirements, and when these are given temporary quarters and attention in pruning and training, they form very much better plants for filling vacancies than those just bought in from the nursery; moreover, as they are growing on the premises, they can be shifted to their new quarters with reasonably large balls of soil and roots. In replanting on a site occupied by old trees for fifty years or more, the border should be renewed. Remove most of the old, exhausted soil to the vegetable garden and substitute a good compost of loam, wood-ash and lime-rubble to a width of three or four feet, after ascertaining that the drainage is in good order. The addition of manures, either farmyard or artificial, is not necessary in the case of young trees, as these are inclined to grow vigorously if fed liberally, at the expense of cropping. The aim of the grower should be to secure short-jointed growths of moderate length in preference to long, sappy ones.

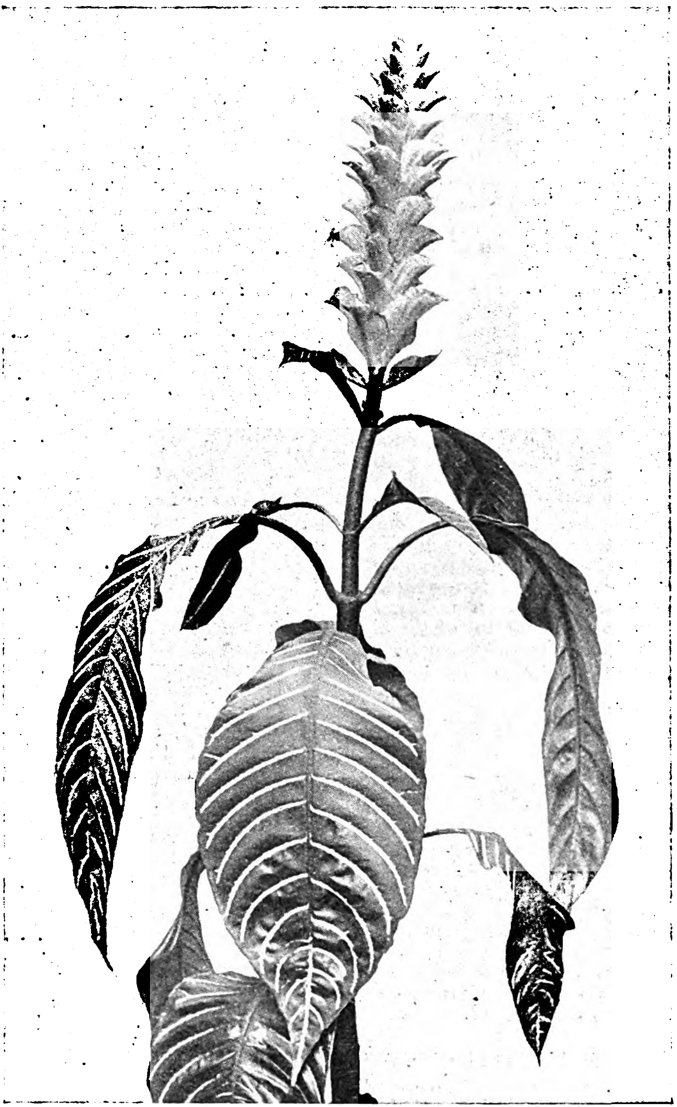

FIG. 127.—APHELANDRA SQUARROSA VAR. LEOPOLDII.

R.H.S. Award of Merit, September 28. Leaves green, cream-veined; bracts pale yellow. Shown by Messrs. L. R. Russell, Ltd. (see p. 272).

Root-pruning.—This operation is rendered necessary when too much growth is being made and it becomes apparent that the energy of the plant is being wasted on the production of wood instead of fruit. By reducing the root-system the balance is restored, which may have been upset by a variety of causes, such as a wrong style or method of pruning, or too much humus in the soil. The method of root-pruning has been so often described in these pages that I need only emphasise the necessity of allowing the operator plenty of room, so that he may be able to sever any roots which are growing down in the sub-soil. When filling in the soil, make it quite firm by ramming, and finish off with a top-dressing of fresh compost to encourage the formation of surface-feeding roots. If root-pruning is done in October, the trees have time to recover from the check before winter, and it is best performed before the foliage has dropped.

Brussels Sprouts.—This valuable winter crop is coming into use, and where the plants were intercropped with earlier-maturing vegetables, the remains of these should be removed, also some of the lower leaves of the Brussels Sprouts, thus allowing plenty of air to circulate among the plants, and also to permit of the Sprouts being picked during wet weather in greater comfort. In gathering the Sprouts, select first those at the bottom of the clusters, which are more or less well advanced and of uniform size.

ORCHID NOTES AND GLEANINGS.

CATTLEYA LABIATA.

Cattleyas have a horticultural importance that is scarcely equalled by any other member of the Orchid family. This pre-eminence is due to the great beauty of their flowers, which are not only of large size, but also exhibit a wonderful variety of colours, from purest white to that of the richest Orchid mauve, whilst the colouring is often enhanced by the most beautiful pencillings and markings in the lip, which is an especially striking feature of the flower. The interest attaching to Cattleyas has been further enhanced by the results of hybridisation, not only by the crossing of one species with another, but also by the crossing of Cattleyas with species of Laelia and other genera. Many new shades of colour have been developed in the progeny, and the various crossings and intercrossings have also brought into existence new forms which are easily grown and bear flowers of better shape, which adapt themselves to every form of floral decoration and lasting fresh longer than those of the typical species.

When growing on the trunks of trees in their native habitat, the masses of Cattleya labiata increase in size in one direction only, which is always the ascending one; even under cultivation the tendency to increase in size in one direction more than another is observable and very defined. The genus Cattleya was founded by Dr. Lindley on C. labiata, and dedicated to Mr. William Cattley, of Barnet, a liberal patron of horticulture in his time.

Cattleya labiata is the collective name for a group of Cattleyas, remarkable for the large size and extraordinary beauty of their flowers, some one or the other being in bloom through the greater part of the year. The group includes a number of distinct forms, known in cultivation under various names, which pass as specific, but in their vegetative organs, too—rhizome, stems and leaves—they present a uniformity that renders it most difficult to distinguish them one from the other when out of flower.

The typical C. labiata, which at one time was called C. labiata vera to distinguish it from the varieties, was an extremely rare plant, and was only represented in a few collections, but on its re-discovery it was imported in such quantities that it was to be found in every garden where there was any pretension of growing Orchids.

The normal flowering season of C. labiata vera, or, as it is now known, the autumn-flowering C. labiata, is October and November, two of the dullest months of the year, when its flowers are especially appreciated by those who have to provide Orchid flowers in large quantities for shooting parties and other functions. At the present time there is a great demand for the original species, while the rarer forms of C. labiata are much sought after, and have realised remarkable prices.

C. labiata was introduced in 1818 by Mr. William Swainson, from the Organ Mountains, where it was almost exterminated many years ago; it is still imported in limited quantities into this country by different firms, which is proof that there are still some plants in existence in its native habitat. C. labiata succeeds under the orthodox treatment for Cattleyas, and may be classed as an easy grower, provided it is not allowed to remain in a decomposed rooting-material.

Upwards of 130 crosses are registered in which C. labiata is one parent, and sixteen First Class Certificates and twenty-five Awards of Merit have been awarded to different varieties of this most valuable autumn-flowering Orchid.

The progeny includes some of the finest white and coloured hybrids in existence, and it is hard to state where its influence ends or begins in the race of autumn-flowering Cattleyas of the present day. In the past C. labiata was probably the only Cattleya to produce its flowers in the late autumn, to be followed in the early spring by C. Percivaliana, C. Trianae, C. Mossiae, C. Mendelii, and C. Warneri, all members of the C. labiata group. *J. T. B.*

INDOOR PLANTS.

THE TUBEROSE.

The Tuberose, Polianthes tuberosa, is much esteemed for its delightfully fragrant, white flowers, although it used to be more popular than it is at present.

By according it the necessary treatment, the Tuberose may be had in bloom over a long period. The bulbs are usually imported at the latter end of the year, and should be potted in successional batches; good loam suits them well, and to it may be added a small portion of leaf-soil and some sharp sand; pots of five-inch and six-inch diameter, in accordance with the size of the bulbs, will be large enough. Until the roots have made some progress, water should be applied with the greatest care; when well-rooted, the early batches should be plunged in a bottom heat of 60° to 70°, the temperature of the house in the daytime, with air admitted, being about 70°. The later batches may be stood on a moist base in a pit or house, and introduced into greater warmth as required. When growing freely, the plants should be kept near the roof-glass, thereby counteracting a natural tendency to tall growth.

P. tuberosa was introduced from Mexico so long ago as 1629, and is figured in *Bot. Mag.*, t. 1817; the fragrant, white flowers are disposed in a long, terminal raceme, the perianth being funnel-shaped and incurved. Varieties are offered under the names of The Pearl, American, African and Italian, the first-named being the best for general usage. Aphides display some partiality for the Tuberose and must be checked by fumigation. *Ralph E. Arnold.*

CALADIUMS.

There are few more beautiful foliage plants than Caladiums, which are suited to all kinds of decorative purposes during the warmer months of the year. I do not know of any foliage plant in which the colouring is more varied—it ranges from white to deepest crimson, and, as they are tuberous-rooted plants, they may, after the foliage has died down in the late autumn, be stored dry until spring, thus making room for winter subjects. They will keep in perfect condition in dwelling rooms for weeks if carefully watered, and anyone who has seen the splendid collections at the leading shows will endorse all I write regarding their decorative qualities.

Those who wish to start a collection should purchase a few corms of named varieties early in the year. These should be placed in boxes of sandy leaf-soil and placed in a warm house. The end of February or early in March is a suitable time to start them into growth. A mild hot-bed will provide moisture quite sufficient to cause growth to start without watering the plants, which is not advisable until they have developed roots. So soon as growth commences, place the plants carefully in well-drained pots according to the size of the tubers, using a rich compost of two parts rough peat, one part fibrous loam, and one part flaky leaf-soil, some old, well-dried cow manure, a liberal sprinkling of half-inch charcoal and silver sand. In potting, shake a little sand around the base of the tuber, just cover it with the soil, and press the latter moderately firmly. Place the plants on the hot-bed again, and do not water them until the roots are active, but daily syringing between the pots will be very beneficial.

A temperature of about 65° will be suitable; as growth progresses apply water as necessary. At that stage stand the plants on a stage covered with ashes or shingle, and keep the shingle damp on all bright days. Admit air at the top of the house, according to the weather, and shade the plants if the sun is bright. The shading, however, should be dispensed with fairly early in the afternoons, as a moderate amount of sunlight will help to bring out the rich tints in the foliage. Air should be admitted early on bright mornings to dry up moisture on the foliage, otherwise the leaves will be liable to scorch if the sunshine reaches them.

Caladiums should not be syringed overhead at any time, but a damp atmosphere should be maintained by damping the stages and floors of the house freely.

If large specimens are desired, the plants may be shifted into larger pots when the roots have reached the sides of the pots, using much the same compost as before with, perhaps, the addition of a little artificial manure. Water the plants sparingly until they are growing freely, and as growth progresses feed the roots with diluted liquid manure and give an occasional top-dressing of some rich fertiliser. To obtain a good effect, the plants may be placed on inverted pots, the largest at the back of the stage, and the others in front, according to their size, so that the characteristics of each may be seen clearly. Air may now be admitted freely during very warm weather, and the plants will then become better adapted for removal and decorative purposes. They will continue in full beauty for several months, and when the foliage shows signs of ripening during the late autumn, water should be withheld gradually and the plants placed where the sun will ripen the tubers.

When the last of the foliage has died away, lay the pots on their sides under the plant stage, where they will not be subjected to drip. The tubers will keep perfectly well if stored in a temperature not lower than 50°; if wintered in a lower temperature than this they will be liable to decay.

Certain varieties increase more rapidly than others, and, when the tubers are shaken out the following spring for repotting, any young ones should be carefully detached, and the wound rubbed with finely powdered charcoal. These young tubers, if potted, will make splendid specimens in a season or two, and the older ones may then be dispensed with. Some of the smaller-growing varieties, such as C. argyrites, make splendid little plants for table decorations, or may be used as edging plants on the greenhouse stages. These small-leaved kinds should be divided every season to obtain the best results. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

SOME USEFUL CLIMBING PLANTS.

In most gardens considerable scope is offered for the use of climbing or trailing plants, and by a careful choice of subjects many an old tree or tree stump may be made an object of great beauty, while walls, rustic buildings, trellises and pillars may be clothed with various climbers which add interest to the collection of plants and enhance the beauty of the garden.

The genus Clematis provides a host of valuable climbing plants, both species and garden hybrids. C. Vitalba, with its fragrant, greenish-white flowers, followed by ornamental, feathery fruits, is a quick-growing climber suitable for covering tree stumps and unsightly objects in the woodland garden. C. Flammula is also useful for similar purposes, its small, fragrant flowers being produced in rich profusion. C. montana is a highly ornamental species, capable of covering a large area of wall or trellis-work, and a well-grown plant trained on a building, or rambling over a tree where its long trailing growths can be gracefully displayed, produces a wonderful effect during the flowering season in May.

But beautiful as the species are, and useful as they may be for certain purposes, they cannot be compared with the varieties of garden origin in size of flower, brilliance of colour and general effectiveness. Probably no other hardy climbers provide such a gorgeous display of flowers over such a long period as the garden Clematises, for by the use of the various groups the flowering season may extend from May till October. The Clematis thrives in a rich, well-drained loam, and on light soils a dressing of good, heavy loam should be added when preparing for planting. The plant is a gross feeder, and annual dressings of manure should be given to maintain health and vigour.

Amongst the Loniceras there are many attractive climbers, some of which readily adapt themselves to almost any soil or position and are eminently suitable for covering the tree-trunks and furnishing arbours, pergolas, etc. L.

gigantea superba is a robust-growing plant excellent for clothing old trees. It bears large, yellow flowers, and its evergreen foliage is of a soft green shade. L. japonica aureo-reticulata is a rapid grower with beautifully golden-netted leaves that are very effective in the winter. The yellow flowers, borne in late summer, are delightfully fragrant, and the plant is particularly useful for rambling over rocks and banks overhanging water. L. Periclymenum, our native Honeysuckle, is a beautiful plant equal to most of the exotic species, and its variety serotina, with deep red flowers, is very showy. L. Hildebrandiana, a Chinese species, is a showy plant, with large, orange-coloured flowers, but it is, unfortunately, not perfectly hardy in all positions, and should be grown in sheltered corners in the south.

The Jasmines provide us with a few valuable climbers, not the least attractive of which is Jasminum nudiflorum, an old winter-flowering favourite and a beautiful plant for walls or pillars. Its long, flexible, green branches produce their clear, yellow flowers in abundance from November onwards and make it most effective. J. officinale is a fast grower of rambling habit and will quickly cover a large space; it is excellent for walls, pillars or tree-stumps. Its slender, deep green branches, beautiful, pinnate leaves and pure white, fragrant flowers make it a most attractive plant.

Many of the species of Vitis are extremely useful for furnishing pergolas, arbours and pillars, the following being particularly worthy of note. V. Coignetiae, a noble plant of vigorous growth with very large leaves of a rich green on the upper surface and a buff shade underneath. The leaves turn to various shades of orange, scarlet and crimson in autumn, when they are very effective.

Vitis heterophylla humulifolia is a slender-growing species with small, lobed leaves. Its small, turquoise blue, spherical fruits are freely produced and very attractive. V. purpurea is a fine vine for colour, the leaves being a deep purple throughout the summer, turning to a rich crimson in autumn. V. Thunbergii is a highly ornamental vine of vigorous habit with large, handsome leaves which turn a brilliant colour in autumn.

The Ivies form another group of useful climbers of considerable attractiveness when grown on pillars or tree-stumps. Hedera Helix angulare aurea is a particularly good plant, with large, bright golden leaves. H. H. argentea variegata is a very fine, silver-leaved plant, its large leaves being margined and veined with ivory-white. H. H. dentata is a very effective plant, with large, drooping, glossy leaves, and H. colchica (Raegneriana) is a rapid grower with large, cordate leaves of bright appearance.

The Wistarias are extremely useful and popular deciduous climbers, suitable for furnishing almost any type of support, and they seldom fail to flower profusely. They thrive in a rich, friable loam and when well-established make extraordinary growth in a season. W. sinensis is the one most largely grown, and it is very free-flowering, its short racemes of bluish-lilac flowers making a rich display in May and June. W. multijuga is remarkable for the length of its racemes which are very beautiful, particularly when hanging from a pergola or bower, but it is not always so free-flowering as W. sinensis.

Two species of Ampelopsis (now Vitis) claim attention as climbing plants. A. hederacea (V. quinquifolia), the Virginian Creeper, is a rapid grower and unequalled for covering tree-stumps or rocks very quickly. Its long, slender growths hanging gracefully from the arms of an old tree-stump, make a brilliant show of colour in autumn. A. Veitchii (Vitis inconstans) is also a beautiful rapidly-growing plant, but of more slender habit. Its short, branched tendrils are provided with suckers which enable it to hold fast to any surface, hence it is ideal for covering walls of great height, where it takes on autumnal tints of intense brilliance.

Actinidia chinensis is a comparatively new plant of rapid growth, with large, deep green leaves which in the young state are covered with conspicuous red hairs. It is an excellent subject for furnishing pergolas and pillars, where its handsome foliage is displayed to perfection.

Aristolochia Sipho is an interesting and remarkable climber of vigorous growth, its dark green, heart-shaped leaves being very effective. It thrives best on light soils and established plants produce their curiously-formed, yellow and purple flowers freely.

Celastrus scandens is a free-growing climber with serrated, glossy leaves and terminal racemes of yellowish flowers, followed by brilliant scarlet fruits. Periploca graeca is a handsome twining shrub with simple, lanceolate leaves and clusters of long-stalked, curious, greenish-brown flowers. It is effective on an arch or pergola but should not be planted near a dwelling owing to its unpleasant smell.

Pueraria japonica is a vigorous climber with large, soft green leaves and rosy-purple, Pear-shaped flowers produced in autumn. It is of amazingly quick growth when established, but succeeds best on a light, warm soil.

Polygonum baldschuanicum is probably the most rampant-growing climber we have, its stems twining and clinging to anything for support, and it will clothe an old tree-stump or the side of a building in an incredibly short space of time. The large, feathery racemes of pinkish-white flowers are borne in great profusion and are showy and effective from June to September.

Sollya heterophylla, the so-called Australian Blue Bell Creeper, is a quick-growing, evergreen climber for a south or south-west aspect. It succeeds best in light soil and produces its attractive, blue flowers freely in August and September. Trachelospermum (Rhynchospermum) jasminoides is a useful Japanese climber of rapid growth, bearing fragrant, white flowers in summer, but it needs shelter in most gardens.

Hydrangea scandens is especially good for twining round a pillar or tree-trunk. It resembles Ivy in its mode of growth and attaches itself securely to any surface. Roses cannot be omitted from a list of useful climbing plants for nearly all the Wichuraiana varieties and Ramblers are eminently suitable for clothing pergolas and pillars, and there is no form in which the Rose grows more gracefully or appears to better effect than when rambling over pillars or similar supports. *W. Auton.*

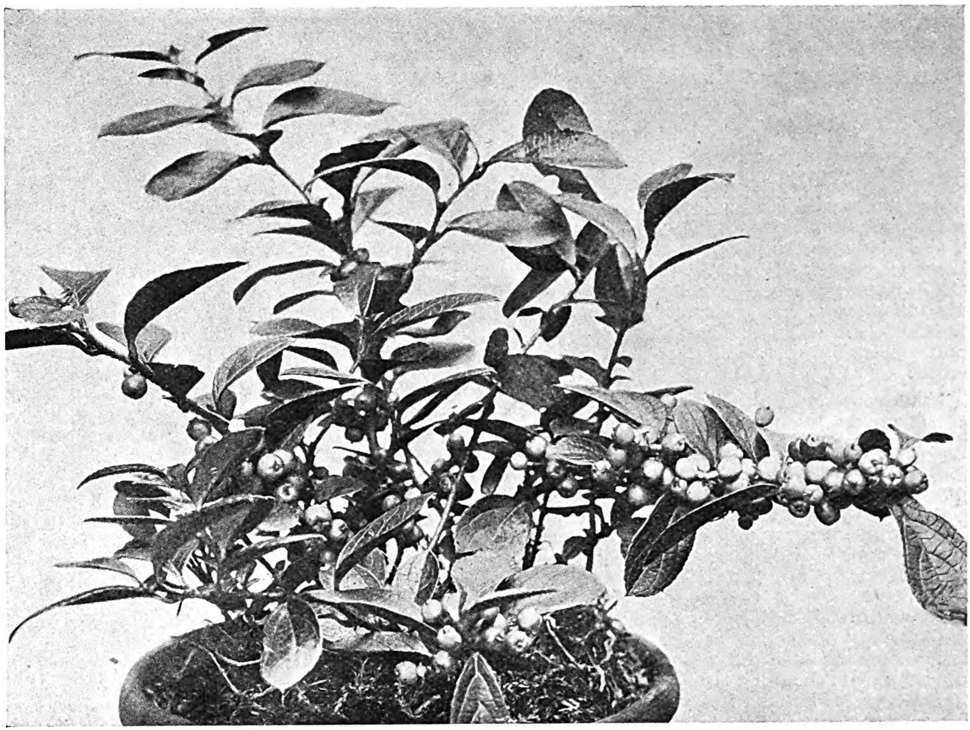

FIG. 128.—GAULTHERIA FORRESTII.
R.H.S. Award of Merit, September 28. Fruits dull blue. Shown by Messrs. Robert Veitch and Son.
(see p. 272).

TREES AND SHRUBS.

THE GOLDEN ELDER.

The Golden Elder, Sambucus nigra aurea, may be considered one of the most valuable of the golden-leaved, hardy shrubs, because of its free growth and adaptability for dry soils and situations. It is sufficiently rich in appearance to justify its admission to the most select shrubbery border, while its free habit also makes it valuable for planting in the more wild places, where it would be liable to get less attention.

Groups of a few plants in prominent positions in shrubbery borders and in the front of plantations make very bright spots throughout the growing season and are wonderfully effective. For distant effect it is extremely useful, and bold groups planted in front of some dark-foliaged subject show up at a long distance with outstanding brightness.

As is usual with golden-leaved subjects the colour is intensified on dry soils, hence in choosing a site for planting, care should be taken that the position is well-drained. The position should also be free from overhanging trees, as the beautiful rich golden tint of the leaves will not develop satisfactorily in partial shade. *A. P. C.*

ACTINIDIA CHINENSIS.

This deciduous Chinese climber is very useful for clothing large pillars, pergolas, or walls. It is quite hardy and appears to do well in any cool, moist situation. The heart-shaped leaves are of a deep bronze-green, often eight inches to ten inches across, and conspicuously covered with red hairs. One disappointing feature of this otherwise beautiful plant is that the flowers last but a short time. They appear early in July, are bright yellow, about one-and-a-half inch in diameter, and borne in clusters on short spurs.

It is stated that the flowers are succeeded by edible fruits resembling Gooseberries, but a fine specimen here has never fruited. As it is a very rapid grower it should be kept under control or it will encroach on other plants. Established specimens require to be pruned hard annually; the current season's growth should be cut back to within two or three buds in late autumn, or, at least, a fortnight before the sap rises in spring. *S. Bowler, Ford Manor Gardens, Lingfield.*

CLEMATIS ARMANDII.

This is one of the most beautiful of the numerous species of Clematis, being very attractive in bloom during April and early May, and possessing the additional charm of evergreen foliage. It was introduced from central and western China by Mr. E. H. Wilson in 1900, and has proved to be a vigorously-growing and free-flowering climber. Although not absolutely hardy, it flourishes abundantly if given the protection of a wall. When fully grown it is twenty feet or more in height, the growths being clothed with trifoliate leaves of considerable size; the dark, glossy-green leaflets are ovate-lanceolate and sharply pointed.

The flowers are produced in clusters on slender stalks rising from the leaf-axils. They are about two inches across, and consist of from five to eight creamy-white sepals, which are, later, lightly tinged with pink.

Undoubtedly, this Clematis is a first-class plant, and should be included in every choice collection of climbers. *A. G. F.*

BULB GARDEN.

THE GLADIOLUS.

Everyone who is in accord with the beautiful can appreciate the joys of the successful grower of the Gladiolus, and it is surprising with what ease even the small grower can achieve success in the cultivation of this wonderful race of plants. Of all the flowers that grow the Gladiolus is one of the most subtle, the most alluring, and the most charming that I know. Wordsworth wrote:—

> "To me the meanest flower that blows can give
> Thoughts that do often lie too deep for tears."

From just a little round corm of insignificant appearance, wrapped up in several brown, silky coats, spring, in a very short time, beautiful flowers which bring rays of sunshine to the grower. The ray may be only a red one, but it may also be of soft pink, lavender and yellow, bright rose, violet and orange, rich scarlet and crimson, and sometimes of the purest white. Certain varieties have but one colour, others will have several, and in some are seen the colours of the rainbow, in many combinations and endless variations of shading and blending, feathering and blotching. These joys may be obtained at little cost and with little effort. A little space, reasonably good soil, attention to details of cultivation, and these little brown corms will provide beauty to the garden over a long period, giving daily joy and pleasure to all who visit it. No flower is easier to grow or surer to flower, none more attractive, none more enduring, and it is singularly free from the annoying attacks of blighting disease or destroying insect.

The Gladiolus has been known to cultivation for nearly four hundred years. There are about 150 known species, some natives of South Africa, some of tropical Africa, while others belong to southern Europe and central Asia. The modern varieties are the result of very many years' work by the hybridist, and in making his selection the points for his guidance may be summed up under two headings: decorative value, and what may be termed field points. Under decorative value must be considered colour, surface texture, effectiveness in mass, size of flower, form of flower, spacing of flower, length of stem, inflorescence, attachment of flower to stem, harmony of colour and keeping quality. Under field points are foliage, vigour, productiveness, precocity, length of flowering season, ability of stem to support flowers, plant resistance to wind and capacity of corm reproduction.

Many of the great advances in the development of the Gladiolus have been brought about by crossing the wild species with the best of the cultivated garden varieties. The spotted-throated Lemoinei type resulted from a cross between the Gandavensis strain and the species purpureo-auratus. The blue varieties have similarly been derived from G. Papilio, and the Childsii and Nanceianus varieties from G. Saundersii. The earliest flowering varieties, more recently developed, have been obtained from crossings of G. aurantiacus and G. primulinus.

About seventy-five years ago the attention of the hybridists was directed to the possibility of the Gladiolus, and a new type resulting from the crossing of the South African and Asiatic species was named the Gandavensis type, after the Belgian city of Gand (Ghent). This type brought the Gladiolus to public notice among favourite decorative garden flowers, and its popularity increased rapidly. It was followed by the introduction of some varieties created by Victor Lemoine, of Nancy, which were named the Lemoinei and Nanceianus types. Later crossings made by Max Leichtlin, of Baden-Baden, which were purchased by Childs, gave rise to the Childsii strains. Still later, the yellow-flowered species, G. primulinus, was introduced, and has resulted in another strain known as primulinus hybrids, many of which have produced marvellous flowers. Among modern hybridists who have worked on different strains or different types of flowers may be mentioned Kunderd, Prestgard, Hoeg, Van Fleet, Kelway, Kemp, Diener, Bannings and others, but in spite of the vast wealth of strains and varieties now available, finality has by no means been reached and great possibilities are still open.

A hybrid, the offspring of a cross between two species, has wrapped up within itself all the possibilities of both parents, because species transmit to their offspring their own hereditary tendencies. Thus, such hybrids are as useful for crossing as both of the wild parents, in fact, they may be more desirable because of greater vigour, and they are likely to cross more readily with the garden varieties. Many of the wild species are difficult to grow, but this does not mean that they have no value for breeding purposes. The history of our garden varieties prove the contrary, for G. cruentus, which is so difficult to handle that it has died out, except possibly in a few botanic gardens, has given us the large and vigorous Princeps, and a whole race of Amaryllis-flowered varieties.

To be a successful plant-breeder one must be somewhat of a dreamer. The breeder must be able to visualise and see in his mind's eye the flower of his dream. He must have an intimate knowledge of his work and breeding stock to enable him to select parents that will give him the object of his dreams. The goal may not be reached in the first crosses by any means, but with persistence and patient waiting, sooner or later, the dream will materialise, and the satisfaction that one experiences from the reaching of the goal more than compensates for all the years of patient waiting and labour. *A. P. C.*

ALPINE GARDEN.

ASPERULA SUBEROSA.

The Woodruffs include a number of choice alpine gems, some of which are indispensable for the rock garden. Where only one or two Asperulas are required, one should be Asperula suberosa, which is one of the very best members of the family for the rock garden. It is sometimes listed as A. Athoa, and it is occasionally known as A. arcadiensis, which is an even choicer species. When in bloom, A. suberosa presents a little carpet of leaves rising from woody stems, the branches being clad with pointed leaves which, in their general effect, have been likened to a tuft of grey velvet. From the axils of the leaves and in spikes at the ends of the branches are produced the trumpet-shaped little flowers, of a charming glowing shade of pink. The plant is not difficult to cultivate. It should be grown in a light, sandy compost containing leaf-soil or peat; and, while some prescribe full sun, I have found that it does quite well in a shady place. But it must have ample drainage, and in very wet climates a sheet of glass should be arranged over this tiny Woodroof in winter. With care, it may be raised from seeds or increased by cuttings or division.

AJUGA BROCKBANKII.

Dipping into a book on hardy flowers the other day, I came across a reference to Brockbank's Bugle, Ajuga Brockbankii, which was, *inter alia*, said to be a somewhat aggressive plant, that would grow in any soil and in any position. This is all true, so far, but what is said about its aggressiveness would lead the uninitiated to suppose that it was difficult to keep in bounds, and might possibly be unsuited for the very places for which it is best. It has a habit of rambling from the root, no doubt, but not so badly as some other plants more cultivated. I have found it excellent for planting in the crevices of stone steps. Where plants were required for growing in the chinks of paved pathways it has been very useful.

It has also been found suitable for places in the rock garden, where its rambling propensities may be guarded against. It might be planted in the front of a border, too, if care were taken that it did not wander too far, so as to encroach upon the territory of other flowers. The plant is a decidedly good one in the way of colour. It is about six inches high, or a little more, and has good spikes of deep blue flowers and deep green metallic foliage. It is not easy to obtain a plant of its colour and height which will bloom so long in summer, and will require practically no care, except to see that it does not injure other flowers. It is sometimes regarded as a variety of A. genevensis. A. Brockbankii is one of the hardiest of dwarf perennials.

SEDUM KAMTSCHATICUM.

Stonecrops present us with many plants which give the gardener a minimum of trouble, and among these are a considerable number with high qualities for many purposes. Still, as a rule, they are not extremely popular, and it is to be admitted that they do not all give the display which most owners of gardens would like. Yet they appeal to many on account of their easy growth and their adaptability in providing carpets of good foliage and flowers for the decoration of hot, dry spots, where little but they or the Houseleeks would flourish. For the rock garden, many of them are admirable, and the subject of this note, Sedum kamtschaticum, is invaluable. It is of trailing, prostrate habit, and has fair-sized, succulent leaves, and heads of orange-coloured flowers in autumn. It has been rather aptly designated the "Orange Sedum spurium," and this well represents its resemblance to the more generally grown S. spurium. It is quite as easy to cultivate as that well-known species, and this is saying a good deal. It is also very simply raised and increased. Seeds may be sown under glass in spring and good plants will be secured by this means. Cuttings strike very readily, and from the trailing branches it is often possible to select a few which have emitted roots where they touch the soil, and these may be severed and planted separately. *S. Arnott.*

WELDENIA CANDIDA.

This beautiful Weldenia from Mexico and Guatemala is closely allied to Zebrina. It flourishes in a peaty compost in a cool, shady situation.

The plant has a long tap root therefore it needs a deep pocket and efficient drainage. The glorious, solitary, snow-white flowers are from one inch to one-and-a-half inch in diameter, freely produced, and clustered together centrally amid the dark green foliage. As a protection against injury by frosts and damp it is advisable to cover the crowns, after the foliage has died down, with Bracken stolons laid cris-cross over the crowns, finally covering them with peat. During extremely severe weather a hand-light or bell-jar should be placed over the whole mound.

The plant is propagated by division, but it is highly doubtful whether enthusiasts would risk the disturbance of an established clump for the sake of increase. *T. D. Boyd.*

HARDY FLOWER BORDER.

TROLLIUS.

These showy, Buttercup-like plants, with deep, glossy-green foliage and large, globular, yellow or orange-coloured flowers, are very serviceable subjects not only for the border but also for cut flower purposes, for which they are admirably suited. They flower at that period of the year when there is often a partial gap, between the real flowers of spring and the bulk of summer flowers.

They are moisture loving plants, and one of the essentials of successful cultivation is a well-worked soil of good depth, preferably on the heavy side. If the soil is light the plants will not flourish, unless a liberal addition of some moisture-holding material is incorporated with it when preparing for planting. Propagation is best effected by division of the clumps immediately after the flowering period.

The original species, T. asiaticus, with bright, orange flowers, and T. europaeus, a native plant, with yellow flowers are still worth growing, but the genus has been considerably improved in modern times, and many of the recent introductions are highly decorative plants. Amongst these may be mentioned Orange Glow, with large flowers of a deep, glowing orange; Glory of Leiden, with very large, deep golden-yellow flowers; Empire Day, with large orange-yellow flowers and orange-scarlet stamens; and Canary Bird, with canary-yellow flowers. *P.*

ANEMONE VITIFOLIA VAR. TOMENTOSA.

Resembling Anemone japonica in many respects, this plant is very attractive in the herbaceous border during August and all through September. The type, which has pure white flowers, and which does not seem to winter well in many parts of this country, is a native of North India.

The much hardier variety tomentosa, which received an Award of Merit from the Royal Horticultural Society in July, 1917, is a native of China, and was collected by Purdom in 1909. It was also collected (F. 436) by the late Mr. Reginald Farrer, who found it growing plentifully along the Kansu-Tibet border in stony fields and river shingles. Despite the conditions under which it grows naturally, it flourishes in most parts of this country in the open border in ordinary garden soil; in fact, I have in mind some fine groups of it which make a wonderful show annually and which are growing in sticky, heavy soil. Anemone vitifolia var. tomentosa forms a compact, bushy plant, with erect, branching flower stems, three feet or more high, the first branches arising from the sheathed axils of two leaves similar to the radical ones, while the smaller branches and peduncles higher up the stems arise from involucres composed of two simple leaves which are small and deeply lobed. The stems and peduncles are covered with silky hairs, as also are the undersurfaces of the leaves, and the outer sides of the sepals and petals, in the latter case the down being exceptionally thick and silky. The radical leaves are on long, slender stems, and consist of three long-petioled, cordate leaflets, deeply lobed and coarsely serrated, rich green on the upper surface, but much paler and downy beneath.

The flowers, which are drooping in bud, but erect when fully open, are borne singly on peduncles up to about nine inches in length. They are clear pink, shaded on the outside with purplish-rose, while the golden-anthered stamens form large clusters in the centre. A. vitifolia var. tomentosa comes true from seeds, which it usually produces in abundance, and these have proved the handiest method of increase. If given a sunny position and deep, moderately rich soil, this Anemone rarely fails to flourish.

ASCLEPIAS HALLII.

This Milkweed is a handsome subject for the mixed border, or for grouping in a sunny position in rather light, loamy soil. It is a strong growing, herbaceous perennial, producing numerous stout, erect growths, up to three feet in height, pale green in colour, and thickly clothed with soft, silvery down. The opposite, ovate leaves are about six inches long and three inches broad; both surfaces, though more especially the under one, are covered with down. They are pale green in colour, have entire margins, and petioles about half-an-inch in length.

The strongly-scented flowers are produced in large umbels on short, downy stems arising from between the bases of the leaves, the dull, whitish-purple sepals being acutely reflexed, while the erect, fluted petals are of waxy whiteness, tinted with dull rose. Though the flowers are not of striking colour, they are not unattractive, combining with the downy stems and leaves to produce a handsome effect. This Asclepias may be increased by division, as it spreads by means of underground growths, or from cuttings of the young growths in spring. It was figured in *Gard. Chron.*, vol. xxviii, p. 183. *A. G. F.*

DELPHINIUM BRUNONIANUM.

A plant that is seldom met with in gardens, but which is more widely cultivated than its reputation would suggest, is Delphinium Brunonianum. Last year I came across a bed of it in a nursery and was asked the name. I knew the plant quite well, but for the life of me could not at the time remember its name, but on my return home it occurred to me, and I wrote to my enquirer, only to learn that a gardener from a good deal further north had been to the nursery and, as it was grown in the garden of which he had charge, he was able to give its proper title of D. Brunonianum.

It is many years since I first saw it in another nursery, and since then I have grown it myself and have seen it in a fair number of places. The reader must be cautioned against supposing that this Tibetan species of Larkspur has any of the nobility of the modern hybrid Delphiniums which are such gallant features of so many gardens. On the contrary, it is a lowly plant, attaining at the most about a foot high, and is sometimes less in stature. The flowers are by no means brilliant; they are of a dull-looking, light blue, rendered duller than they would be by the hairs which abound upon them.

Its most striking feature, perhaps, to some, is the fact that it is strongly scented with Musk. This is a quite good border flower, but a dull, black-purple sort is often sold for the true D. Brunonianum. It may be raised from seeds or increased by division, and grown in sun or shade in ordinary soil. *S. Arnott.*

PAPAVER ORIENTALE VARIETY PETER PAN.

Most Oriental Poppies have such long flower stems that they are of little value in the garden unless supported; the variety Peter Pan (Fig. 129), however, is a noteworthy and very useful exception. Its flower stems are only one foot high, strong and erect, and its bright scarlet flowers, of similar size to those of other Oriental Poppies, will withstand wind and rain. Peter Pan commences to flower in the early days of June, when few other flowers of such bright colour are open. *J. W. C.*

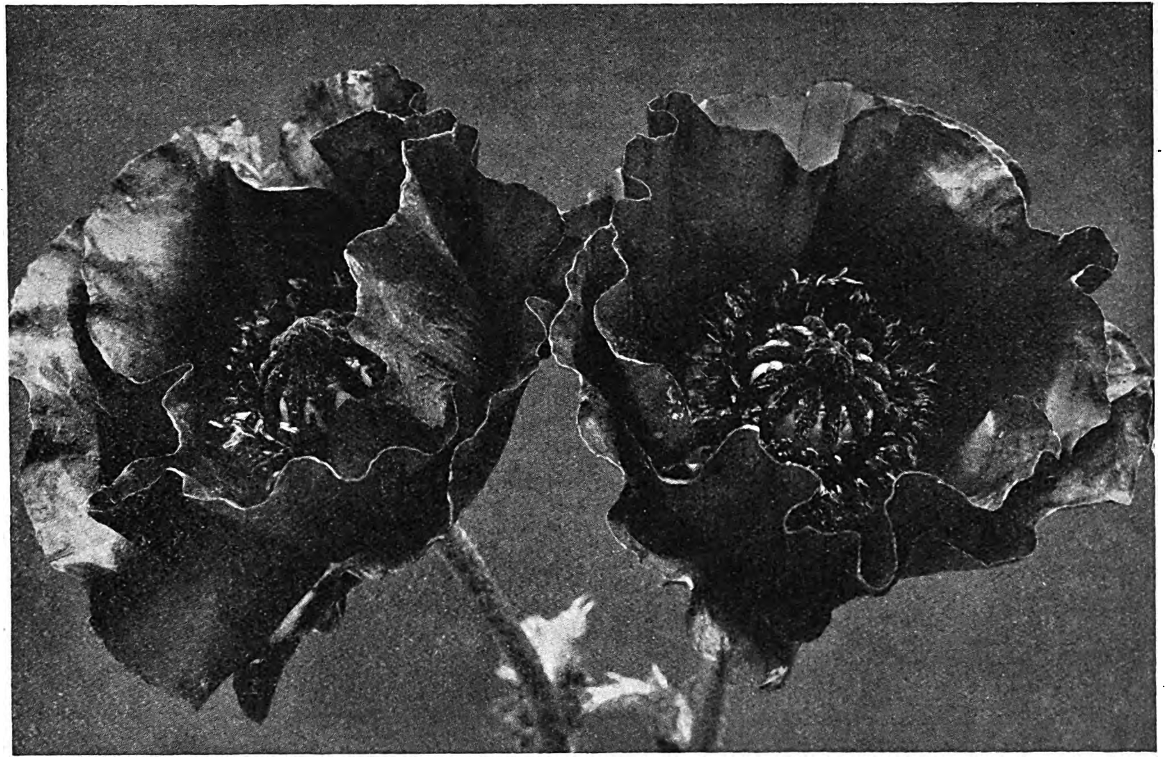

FIG. 129.—PAPAVER ORIENTALE VAR. PETER PAN.

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IDEAL GARDENS AND PLANT LORE.

IN HOMER'S WIDE DOMAINS.

(*Continued from page* 30.)

ULYSSES has reached the Palace of Alcinous, and now gazes with delight on the entrancing garden, which we have ideally placed near the terrace with broad steps leading thereto. Four acres are devoted to this plot which is surrounded by a green enclosure and protected from the storms and inclement weather.

> "Tall, thriving trees confess the fruitful mould;
> The reddening Apple ripens here to gold.
> Here the blue Fig with luscious juice o'erflows,
> With deeper red the full Pomegranate glows."

It would, perhaps, be regarded rather as an orchard than a garden, but as the garden of Ulysses, to be described later, is to take the place of the orchard it is desirable to name some of the plants, familiar to Homer, with which this space may be filled before proceeding to study the architectural details. It is the "beds of all various herbs, for ever green" which here "in beauteous order terminate the scene" that for the present claim our attention.

THE POPPY.

Both because it is a plant of brilliant and arresting colour, and because of its properties and remarkable history and associations, the Poppy will require much space. In one bed the somniferous form (Papaver somniferum) will tell us a great deal about Opium and supply us with many historical facts. We shall read De Quincey again, review the story of the Opium war, trace the history of the word "Opium" in the Semitic and Far Eastern tongues, and find that the plant-lore of the Poppy needs a volume. Also, in order to let Homer see that still Man, if not Nature, is "red in tooth and claw," and that this Christian age may emulate heroic deeds, we shall sow a bed of Flanders Poppies, "Lest we forget." Better still, that the old poet may see what Mendelism and selection can do, and that even a non-militant parson may yet have a place in the sun, we will plant Shirley Poppies in some brave spot.

Homer alludes (*Il.* viii, 306) to the drooping capsule of the Poppy or, perchance, the flower.

> "As full-blown Poppies, overcharged with rain,
> Decline the head, and drooping, kiss the plain,
> So sinks the youth."

In Pope's translation we find in a note by the classical scholar, the Rev. T. A. Buckley, a quotation from Tasso (*Gier. Lib.*, bk. ix, 85), to illustrate this passage (see "Chandos Classics" ed. p. 149). The Poppy head had its own special designation in Greek, being named a *kodeia*, a term which has, along with its derivatives, a number of interesting associations. *Kode* is the word for Poppy seed, *kodon* means a bell, and *kothon*, which seems to be a dialect-form of the same, was the name given to a cup, goblet or Laconian drinking vessel. That the sleep-giving properties of the Poppy were known in Homer's day we know from an allusion in the *Iliad* (xiv, 499).

For the folk-lore relating to the Poppy one must refer to such works as Dr. Dierbach's *Flora Mythologica*, where much of the old-world lore is set forth. The plant sprang up where the tears of Venus fell as she wept Adonis dead. The Gods of Sleep, variously known as Hypnos (Greek), Somnus (Latin), Thanotos (Death), and Nyx (Night) were either crowned with the flowers of this plant, or are represented as holding them in their hands. Winkelmann informs us further that Cybele carries a Poppy head, while Here or Juno, as well as Hermes, bear the plant in the left hand.

THE ASPHODEL.

The Asphodel will find a place in our Homeric Garden. It grows in such profusion in Corsica and elsewhere in the Mediterranean, as I saw last Easter, that it becomes a pest to the farmer. Having crossed the Styx, as Homer informs us, the shades of the departed passed over a long prairie of Asphodel. The root was formerly used as food by the very poor, and under the name of "Food for a King" (*Cibo regio*) was once highly esteemed. It is said that the flowers in the Elysian Fields produced grains for the nourishment of the deceased, on which account the Greeks planted Asphodel along with Mallows around their graves and sepulchres. The roots were also placed in the tombs that they might serve for the nourishment of the departed. Let us take a quotation from Lucian:—

"I know why Mercury keeps us waiting so long. Down here with us there is nothing to be had but Asphodel, and libations, and oblations; and that in the midst of mist and darkness. Up in heaven, however, it is all bright and clear, and plenty of Ambrosia is there, and nectar without stint."

And now, if we look for the Daffodil in *Skeat's Dictionary* we shall find it under Asphodel and if we so desire we may make this an excuse for bringing Daffadowndillies into our garden as representing folk-lore. The story is familiar in connection with several words in our own as well as other tongues. A letter is added to or dropped from the beginning of a word and the thing is done. We have newt for an ewt (Sussex effet even to-day), and conversely an apron from napron. So, possibly, we get a pedigree something like this for the Daffodil: Asphodelus (Greek), old French *asphodile* and *affrodille* "th' affodill, or Asphrodill flower," *fleur d'affrodille*, Daffodil flower. Many able scholars have disputed the theory, and I leave them to quarrel like dogs over a bone, but very thankful for the opportunity they afford me of adorning my garden with so popular a plant.

But if the Narcissus is one with the Daffodil we may possibly find allusion thereto in the Homeric Hymns (*Cer.* viii, 428). The flower was said to produce torpidity, whence Sophocles speaks of it as the chaplet of Ceres and Proserpine the goddesses of the infernal regions. The pretty Tazetta was formerly known as Pluto's Narcissus, and the flower is intimately associated with death, as well in ancient plant-lore as in modern. It is appropriately used, therefore, in wreaths for the departed.

THE HYACINTH.

The Hyacinth and other flowers are mentioned together in one touching passage in the *Iliad* (xiv. 348 and context). Buckley renders it in the following way:—

"Thus he spake, and the son of Saturn encircled his wife in his arms. And the divine earth produced fresh herbage under them, the dewy Lotus, and the Crocus, and the Hyacinth close and soft, which elevated them from the earth. Upon this (couch) they reclined, and clothed themselves above with a beautiful golden crown; and lucid dew-drops fell from it." Frazer (*Golden Bough*, 1890, i. 103), thinks Homer's picture was perhaps painted from the life.

Milton's description of the couch of Adam and Eve (*Par. Lost.*, iv. 700) may here be compared with Pope's translation.

> "Underneath the Violet,
> Crocus, and Hyacinth with rich inlay
> Broidered the ground."

Of the Violet and other flowers we shall write later. Pope introduces the Hyacinth thus:—

> "Gazing he spoke, and, kindling at the view,
> His eager arms around the goddess threw.
> Glad earth perceives, and from her bosom pours
> Unbidden herbs and voluntary flowers;
> Thick new-born Violets a soft carpet spread,
> And clustering Lotos swelled the rising bed,
> And sudden Hyacinths and turf bestrow
> And flamy Crocus made the mountain glow."

But what was the Hyacinth? It was a flower which gave rise to the epithet "hyacinthine." It has been definitely affirmed by some authorities that it had nothing to do with the plants which we name Hyacinth to-day. One writer claims that it was the blue Sword-Lily or Iris (I. germanica, L.), while others favour the Larkspur (Delphinium). Happily for us, both these flowers are worthy of a place in our Homeric Garden, and we therefore admit them gladly Theocritus calls the flower black, and if we would understand this we cannot do better than read the very instructive volume by Dr. Delitzsch entitled *Iris*. The dark hair of Ulysses and the Hyacinth (*Od.* vi. 230) are compared the one with the other. But a once famous botanist named Tenore maintains that a Gladiolus (G. byzantinus) is intended. This, as Dr. Dierbach remarks, is "Eine Prachtpflanze, die im Orient, aber auch im südlichen Italien wild wächst. Ihr ungefähr zwei Fuss hoher Stengel trägt 5-6 Blumen, die beinahe so gross wie die der Weissen Lilien sind, aber eine schöne carmoisinrothe Farbe haben."

This plant also has the spots which may be read as a Greek word for Woe. Whatever the Hyacinth was, it originated, like so many other plants in Greek mythology, from besprinkled blood. It was the flower of Apollo. Dr. Prior considers it impossible to identify the flower. "Some suppose it to have been the Martagon Lily, some a Gladiole. The former seems to have been Ovid's plant, the latter that of the Sicilian poets." So, for Ovid's sake, we bring in the Lily to keep the others company.

THE LOTOS OR LOTUS.

Dierbach follows up his remarks, quoted above, by stating that this is a good place to add a brief word respecting Homer's "Lotos oder Honigklee (*Melilotus messanensis Desf.*)." We may quote another passage in which the Lotos is introduced (*Iliad.* xxi, 350). Buckley reads:

"As when an autumnal north wind immediately dries a newly-watered garden, so was the whole plain dried, and it consumed the dead; whereupon he (Vulcan) turned his all-resplendent flame against the river. The Elms were burned up, and the Willows and Tamarisks; the Lotus was consumed, and the rushes and reeds, which grew in great abundance round the beautiful streams of the river."

Our list, however, is becoming so lengthy, and our task so arduous that it is time we gave ourselves a brief space for taking breath. We cannot do better, therefore, than join the Lotos-eaters (Lotophagi), and try to digest what has so far been set before us. We may however, return to this study later. *Hilderic Friend.*

GAP AND THE ORANGE LILY.

DURING the present summer a Botanical Congress was held at Gap in the Hautes Alpes. The Congress was attended by a number of savants from various countries, in addition to many local students, reinforced by the pupils of a convent in Marseilles, "captained by a charming lady of Madonna-like beauty." Ireland, north and south, for once undivided, was represented by Professor Augustine Henry, of the National University, who received a warm welcome. We are indebted to a friend of the Professor's for some extracts from a letter describing the delightful gathering at Gap, which is the centre of an earthly paradise in summer, full of glorious wild flowers. At Gap there is also a museum containing many rare collections of the local flora which have been made for years past with that care and enthusiastic energy so characteristic of the French. They have been preserved, as some of them form the work of a life-time, but some are in danger of decay for want of skilled attention. Mrs. Henry, who has joined in preparing many of her husband's collections, presented the Gap Museum with five hundred francs to help in the conservation of these treasures.

Every morning before daylight the eager students started under the guidance of professors, crawling in Indian file, with the aid of small lanterns, along the edges of precipices and up stony ravines. The Forestry Department of France has transformed the slopes of these mountains, once almost deserts, owing to the torrents which swept away all efforts at husbandry. The inhabitants were sunk in wretched poverty, and some had to be transferred to land in Algeria. Now, as the result of forestry, the steep slopes are clothed with valuable timber, the climate is altered and the valleys produce crops of wine, realising £80 an acre; cornfields clothe the sides of the ravines. The luxuriant forests offer glorious walks. The people now grow three crops of hay in the year, and grow also quantities of Cherries, fields of Barley and Rye. The rich plains of Provence are extending up the sides of the mountains. The people of the plains and of the mountains speak not French, but Provençal, and the schools teach only in French. There is much difference of opinion on the subject.

Our savants rested during the torrid heat of the day, from 10 to 4 o'clock. The professors, curés, and various amateurs, engaged in lively discussions, formulated theories, and, to judge by the reports of the *Courier des Alpes*, made speeches after dinner (which was invariably a triumph for the cook). The air was thick with sincere words of praise and appreciation from one to another. Professor Henry said that he was "forced to be eloquent in French." He has discovered in its primal home near Monétier-les-Bains the original wild form of the Orange Lily.

"I am," he stated, "tracing out the history of this sacred flower, dear to the heart of Ulster. It is rare to find it in the wild state, but we found it in profusion in one spot, and saw it in all stages of growth, from the tiny seedling to the adult plant. The orange colour is wonderful here, and the flower is the largest borne by any European plant. I am trying to work out its legendary and historical lore. It is not quite easy, but I shall get at all the facts soon. You can imagine what a wonderful show it makes in a forest glade. . . . There are also two wild fruit trees here, peculiar to this valley, the Plum of Briançon (Prunus brigantiaca, Villars, now usually classed as a wild Apricot), and the other is a Pear (Pyrus amygdaliformis, Villars). The latter is a most graceful, but extremely rare, tree. The French officer who climbed the tree to get some fruit for me was a very brave man, as it was very thorny. He bled profusely, losing more blood than at Verdun. Both these trees are neglected children of the wild, and will be of great use when introduced into cultivation, as they resist drought, live in poor soil and will serve as splendid stocks to be grafted upon. These two trees necessitated much labour. It will take two days to return to the spot where the wild Pear lives. I had the same difficulty with the Orange Lily; but the Professor of Drawing at the College in Briançon made a splendid painting of the wild plant.

Gap is famous for two wonderful botanists of the eighteenth century. Dominique Chaix, a priest, was a great botanist, and he educated the other, Dominique Villars, whose great book on the flora of Dauphiné ranked as of primary importance in the time of Linnaeus. I have succeeded in obtaining a fine portrait of Villars, but there is no relic of Chaix. It was he who first gave a name to the Orange Lily. He called it Lilium croceum."

AQUA SANA.

The village of Monétier-les-Bains has been a watering place since the fourth century, and the river on which it stands is called Guisane, which was named by the Romans Aqua Sana from the three medicinal springs at the baths, each different, gushing forth warm and reddish-brown, but delicious, water, full of radium and sulphur. To drink this at 5 a.m. ensures the days of Methuseleh.

Professor Henry also discovered Manna on Larch trees, only known in this village. It is like snow on the branches, white and sweet, and is certainly due to aphides. "This Manna is very interesting to me," he stated, "because, on the very day I was born, the famous pharmacologist, Hanbury, found a single branch at Chantemerle, near here. This sample was the only specimen in the British Isles till I procured another which is now at Kew."

This marvellous, health-giving spot is virtually unknown and neglected by the tourists in cars and charabancs, who rush by it on the Grande Route des Alpes; yet the old conquerors of Gaul did not fail to discover it. *Evelyn Gleeson, in "Irish Times," September, 22.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

IT was a sorrowful sight that presented itself in a neighbour's garden—a fine bush of Eucryphia pinnatifolia defoliated by a horde of caterpillars of the Buff-tip Moth (Phalera bucephala). These caterpillars are gregarious, browsing indifferently on Elm, Oak, Beech, Birch, Alder and other deciduous trees. Eucryphia must have proved a novel delicacy for them; but a bush of E. cordifolia hard by remained unmolested. This caterpillar is easily recognised from its yellow coat, barred with black and plentifully set with hairs. It grows to a length of two inches. The pests scatter in autumn, and one may often see the caterpillars crossing garden paths on their way to pupation.

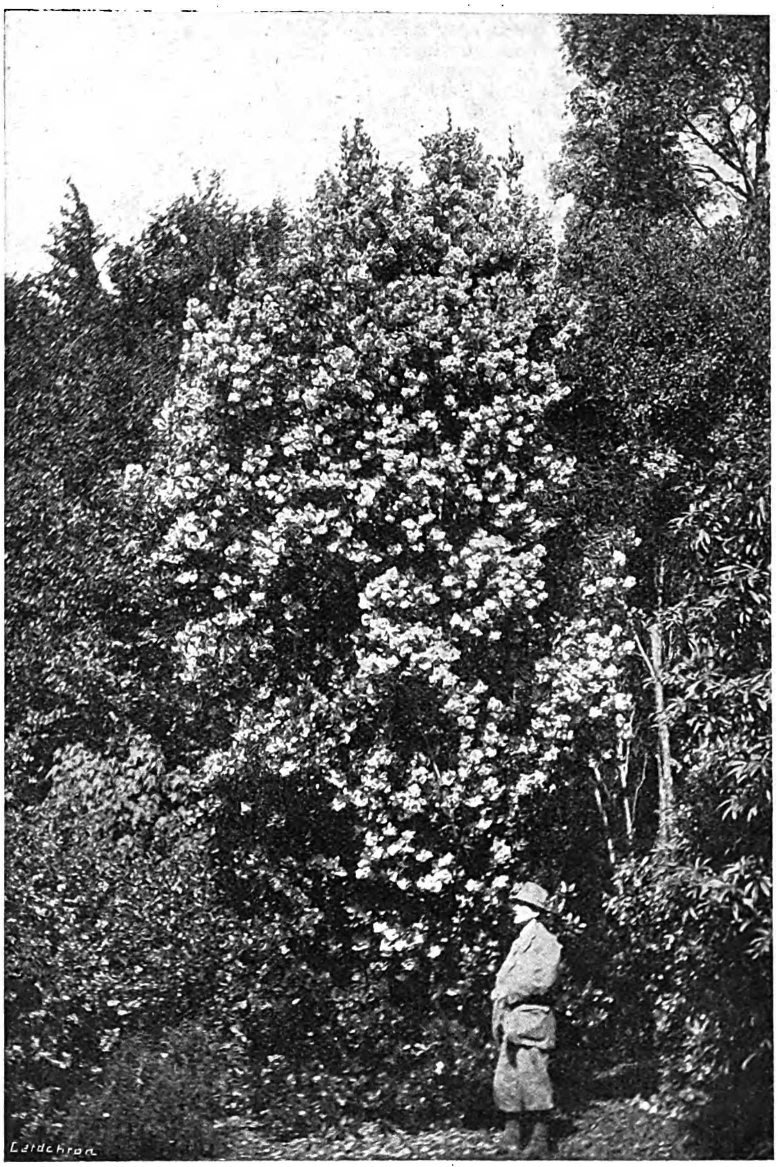

FIG. 130.—EUCRYPHIA CORDIFOLIA AT CASTLE KENNEDY.

The fine figure of Eucryphia cordifolia at Nymans, given in *The Gardeners' Chronicle* of August 13, described by Mr. Comber as "probably the largest tree of its kind in this country," caused me to ascertain the dimensions of a specimen growing in Lord Stair's grounds at Castle Kennedy (Fig. 130). This was carefully accomplished, the result showing that it is now exactly the same height, thirty-one feet, as the Nymans tree was in 1926, and somewhat greater in breadth—twelve feet—owing to its having branched into four main stems at one foot from the ground. It is five years younger than the Nymans specimen, having been planted in 1910.

A wrong preposition slipped into my note on Clerodendrons (page 249), which reads that in our latitude neither C. foetidum nor C. trichotomum flowers in September. I meant that they do not flower *till* September, the latter species being very pretty on the 24th of that month, though the display is not nearly so rich as I have seen it at Abbotsbury and elsewhere in the southern counties.

There are strong colours among autumn flowers, wherefore it is wise to make note of harmonious grouping. A rich effect may be ensured by planting the fine blue Aconitum Fischeri with Kniphofia Uvaria and Lilium auratum. Achillea Golden Plate is a really good thing, holding aloft its flat, yellow disks on four feet stems that bow not to wind or rain. It accords well with the Willow Gentian (Gentiana asclepiadea) or with the purple Echium plantagineum, which, though usually treated as an annual, is a true perennial, bearing a constant succession of flowers from June till October.

Lythrum alatum also lasts long in flower. Introduced from North America about one hundred years ago, one seldom sees it in cultivation, though it is distinct and of delicate beauty, usually growing between two and three feet high. Houttuynia cordata, a member of the Pepper Order, is not included in the *Kew Hand-List*, which may mean that it is an uncommon plant. It is well worthy of a moist place in the border, where it may spread freely by its long runners. From August to October it never fails to attract approval, its petal-like bracts forming a snow-white setting for the inch-long spikes of yellow-anthered flowers. These are liberally produced, and very conspicuous among the cordate leaves which are richly stained with maroon.

No more precious addition to our autumnal borders has been made in recent years than that of Gentiana sino-ornata. This plant has an amazing constitution; sprigs may be pulled out of it at this season without the slightest detriment to the clump; each one has white rootlets attached, and if set in the open ground or a cold frame will grow into a good plant to flower in the following autumn. Would that G. Farreri were as docile!

Everybody knows that lots of people grow Hydrangea paniculata grandiflora, of which all the florets are sterile; but the original wild species, whereof half the flowers remain entire, is very seldom seen. Recently, I saw a fine bush of the latter in full flower at Castle Kennedy which convinced me that it was a more desirable plant than the variety which has become so popular. *Herbert Maxwell, Monreith.*

NOTICES OF BOOKS.

The Propagation of Trees and Shrubs.

THIS book* has been written with the object of bringing to prominent notice the various factors necessary for the successful propagation of hardy trees and shrubs. As is well-known, there are certain trees and shrubs that may be increased without much trouble by the most unenlightened amateur, but there are others that present considerable difficulties to the professional propagator.

Chimonanthus fragrans var. grandiflora is a shrub that is often difficult to propagate from cuttings; in fact the late Dr. Lindley, upon one occasion, offered a guinea to any student in the Royal Horticultural Society's Gardens who would bring him a rooted cutting of it. Since that time numbers of cuttings of this particular shrub have been rooted, although there are still many people who find it difficult to propagate. It is the object of the authors in their new work to indicate the different means whereby these so-called difficult plants may be increased, and also to describe the most satisfactory methods for increasing the numerous kinds of trees and shrubs in cultivation. Thus some are best increased by seeds, others by cuttings, others by grafts or buds, others by layering, and so on.

The early part of the book deals with physiological questions concerned with propagation, after which there are chapters dealing with various forms of propagation with descriptions of the manner in which different kinds of seeds should be dealt with, the best time and methods of making cuttings, grafting, layering and budding, the book ending with an alphabetical list of genera with instructions as to the best means of increase. On page 45 the use of the dibber for the insertion of cuttings is condemned. With this we do not agree. Provided a dibber is used in a proper manner it is a very excellent instrument for the insertion of cuttings, and where hundreds of thousands of cuttings have to be inserted quickly it would be difficult to find a better tool. However, this is a small matter, and on the whole the advice given in the book is excellent. Messrs. Dulau and Co. have produced the book well, both letterpress and illustrations being good. *W. D.*

MESEMBRYANTHEMUM.

(*Continued from p.* 263.)

12.—GLOTTIPHYLLUM, HAW.

VERY dwarf succulent perennials branching close to the ground. Leaves 4 or more to a branch or division of the plant, opposite, crowded or very closely placed, usually three to several times as long as broad, but in a few species occasionally not much longer than broad under natural conditions, those of each pair subequal or unequal in size, and usually with the terminal part of one leaf different in shape from that of the leaf opposed to it, either arranged in two rows or the alternating pairs crossing one another; thick, soft and pulpy in substance, green, rarely whitish-green or brownish tinted, without dots, or in some species pellucid-dotted.

Flowers solitary (see Fig. 131, showing structure) lateral, large, bractless. Calyx 4 (in one doubtful species, 5)-lobed down to its union with the ovary, often angular. Petals numerous, free or slightly united at the base, cuneately linear. Stamens numerous, erect, no staminodes. Stigmas 7–11, radiating or ascending, stout, plumose; style none. Ovary partly superior, convex or flattish on the top, 7–11 celled; placentas down the centre of the outer wall of the cells.

Capsule convex or flattish-convex on the top, with 7–11 valves and cells; each valve with a pair of expanding keels half as long as itself, ending in fine, awn-like points, without marginal wings; cells roofed with rigid cell-wings and their opening nearly closed by a large tubercle. Seeds small, ovoid, with a small nipple at one end.—Haworth, *Rev. Pl. Succ.*, p. 103 (1821), and N. E. Brown in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 311.

Species 26 or more, so far as known all natives of the southernmost part of South Africa, between Cape and Albany divisions, extending inland so far north as Prince Albert division. The type species is G. linguiforme, N. E. Br. (syn. Mesembryanthemum linguiforme, L., and M. scalpratum, Haw.)

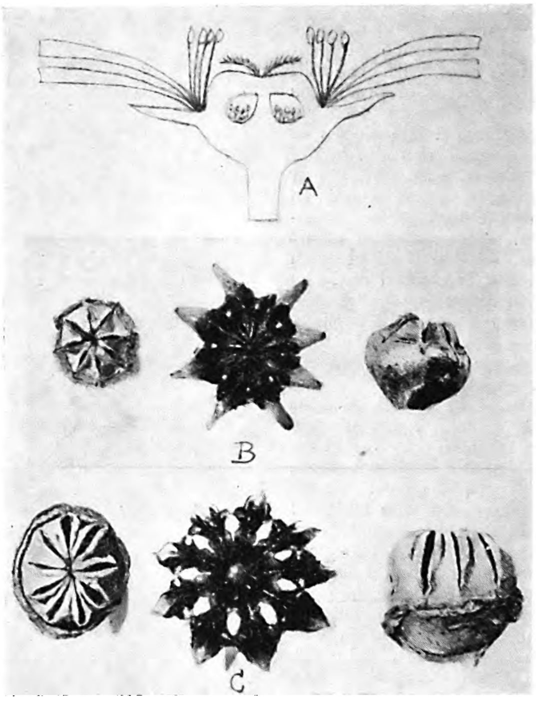

FIG. 131.—GLOTTIPHYLLUM.
A. Section through flower of Glottiphyllum longum, only two of the ten stigmas shown; B. fruit of G. arrectum; C. fruit of G. fragrans (?).

The name is derived from the Greek *glottis*, a tongue, and *phyllon*, a leaf, in allusion to the long, tongue-shaped leaves of several of the species.

I believe that the species of this fine genus are not particularly sought after by those who are interested in this group of plants, because it so often happens that those that are obtainable, although provided with many different names, are found to be so much alike as to evoke but little interest from the cultivator. I think there are three reasons for this, as follow:—(1) Those who are able to name these plants from books, usually use Salm Dyck's fine figures for that purpose, but as I have repeatedly stated, the names therein given are often very untrustworthy, and as it seems that the names in that work are usually accepted as correct without the slightest investigation of their authenticity, plants named by means of those fine figures are very frequently wrongly determined, and as the same species is sometimes figured in the work

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The Propagation of Trees and Shrubs, by G. C. Taylor, B.Sc., and F. P. Knight. Dulau and Co., Ltd., 32, Old Bond St., W. 1. 5s. net.

under two or three names, it is easy to understand how different persons naming the same plant from that book may impose different names upon it. (2) Haworth, apparently unaware of the variability of these plants, described mere forms of one plant as distinct species. (3) There are, in reality, a number of perfectly distinct species of this genus in South Africa, many of which have been introduced into cultivation and described and figured. Most of them increase slowly by branching and therefore are more seldom propagated by that means than they are by seeds, and it is by means of seeds that many (perhaps most) of the cultivated plants are distributed. Now, as many of these plants require to be cross-fertilised to produce seeds, and as it would often happen that only one plant of a given species (especially if it is uncommon) would be in any particular collection, it is easy to understand that hybridisation would frequently occur. So that it appears to me that what has happened is this: the original species died out of cultivation, but plants raised from seeds produced by it survived, but were really hybrids, and these again and again producing seeds by hybridisation to which the same name or names have been given, have resulted in a lot of hybrids, similar in appearance but bearing different names, being distributed among cultivators at the present day. It is now quite difficult, if not impossible, to obtain several of the original species true to name from cultivators in this country or on the continent. For example, I find cultivated in Kew Gardens the following species of Glottiphyllum that have been received from various collections in this country and on the continent under the following names as species of Mesembryanthemum :—G. longum has been received under the names of M. lucidum, M. bigibberatum and M. Salmii ! and G. latum has been received under the names of M. bigibberatum, M. angustum var. heterophyllum, and M. longum var. declive !

Those which I believe to be hybrid forms appear to me to be hardier than some of the true South African species, of which I possess about fourteen distinct kinds, some of which are rather delicate, requiring careful treatment under cultivation.

An account of all the known species was given by me in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327 and 336, and 1922, Vol. LXXI, p. 9 and 22. Since that time, however, I have received some new and old species from Mrs. Bolus, Mrs. van der Bijl, Dr. Marloth and Dr. Muir, and with the aid of these I have restudied the described species afresh, and although in the main my conclusions remain the same with regard to synonymy, I have made some important modifications in consequence of the greater amount of living material I have been able to examine, and more especially on account of some very important information I have received from Dr. J. Muir concerning these plants.

Dr. Muir has made the very interesting discovery that under natural conditions some (perhaps most) of the species exist in two different forms that are connected with each other by a series of intermediate forms, so that although the two ends of the series are very different in general appearance they cannot be distinguished as distinct varieties. Dr. Muir states : "At one end of the series is a harder, smaller and darker green plant, often with some tinge of brown or red, with less juice ; at the other a lighter green, softer and much larger form. They may both equally well bear flowers, and the smaller form seems a complete example therefore. In the same locality both may be found, the smaller, harder type in more exposed and on shallower soil, for example, on a flat rock or where there is less moisture. The softer, juicier form further away, under the shelter of a shrub, in deeper soil or where moisture is retained longer. Sometimes the harder, smaller form seems merely younger. In cultivation (in South Africa) the harder form gradually, even after a year or two years, seems to change into the other form. But the harder form is more resistant to climatic changes ; for example, frost congeals the juices of the softer form, which dies, whilst the harder form survives (see also a note under G. latum). The bevelling and hooks at the ends of the leaves of some species exist in miniature in the harder form and are therefore often not so noticeable as in the more juicy forms. My specimens of G. Muirii, of which I had both extreme forms, and of which the smaller and harder form had remained as such since 1924, has now (June 1926) during the past few weeks undergone a change and become greener and juicier and are quickly assuming the other form."

An illustration of these two extreme forms is given in Fig. 132, reproduced from *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327, where I thought the plant might be G. pustulatum, which I had not then seen, but now that I know that species, I find it is distinct and I have named the plant figured G. erectum. I there called attention to the remarkable difference between the plants represented growing together in the same pot and raised from seeds taken from the same seed-pod, but did not then understand the significance of it. Dr. Muir's discovery throws light upon it, but does not completely explain the reason for it. At the present time both the plants represented in Fig. 132 are indistinguishable from one another ! Did one of the plants obtain most of the water supplied to that pot at the expense of the other plant and so partly starve the latter, or is there some other explanation ? At any rate, Dr. Muir's discovery clearly supports the view it will be found I have taken under G. latum, that all the figures of Salm Dyck's that I have quoted under that species and its variety cultratum represent only individual forms of one and the same species, especially as it is confirmed by the fact that in my own greenhouse one plant of G. latum is actually transforming itself into the variety cultratum, but whether it will perpetually retain the curvature of its leaves, by which alone that variety is distinguished from typical G. latum, remains to be seen.

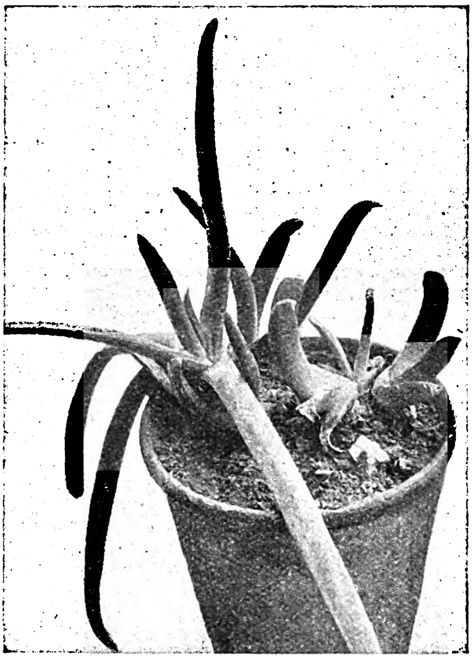

FIG. 132.—GLOTTIPHYLLUM ERECTUM.

Dr. Muir believes (and in this I quite agree with him) that the early botanists, who did not know of this variation, were misled into mistaking the various forms a single species may assume for distinct species, and adds in a letter : "The whole question of this variation seems regulated by laws acting consistently and regularly, and the different forms do not occur with the bewildering arbitrariness which must appear to exist to one in Europe."

That the variation of the species of this genus under natural conditions has caused and will still cause difficulty in recognising whether any given plant imported into Europe is a distinct species or a variety of another is very evident and certain. Even during the past year I have been utterly deceived in the case of plants received from Dr. Muir of G. fragrans and G. pustulatum, whose leaves were so different from those of the plants known to me by these names that I at first made descriptions of them as being new species, and am quite sure that any other botanist or cultivator who had no knowledge of the variation extant in these species would have likewise considered them to be distinct, I therefore direct the notice of cultivators to the sketches of the leaf variations (to appear later) I have made under these two species and call attention to the notes made under those and other species. *N. E. Brown.*

(*To be continued*).

PUBLIC PARKS AND GARDENS.

Some original and effective bedding schemes may be seen in Roundwood Park, Willesden, at the present time, and the Superintendent, Mr. Thomson, has had his successful efforts rewarded this season by the Council by the addition of another good glass house for propagating purposes. For so wet a season the display is especially praiseworthy.

A bed of red and plum-coloured Coleus Verschaffeltii contrasts pleasantly with the green foliage of the St. Bruno's Lily, a species of Anthericum with which it is associated ; an edging of the silver foliage of Antennaria tomentosa lightens the colour of the bed. This effective edging and other silver-leaved plants, such as Centaurea candidissima, Helichrysum and Santolina Chamaecyparissus (well-clipped) are extensively used in Roundwood Park.

A bed where grey-green and silver combine admirably with lavender and lighter green is seen in a groundwork of Nepeta Mussinii in full flower, and among its lavender flowers stand Abutilons and white Gladioli. The whole bed is neatly edged with Santolina Chamaecyparissus neatly clipped. A similar colour scheme may be seen in a bed of Verbena venosa whose lavender-mauve flowers blend with the edging of a silver Senecio and Centaurea candidissima. In another bed standard Heliotropes of the variety President Garfield, edged with Antennaria tomentosa and yellow Violas, still in flower, provide a deeper tone of mauve. Although these Heliotropes were almost defoliated by late frosts, they are now none the worse, and are making a grand display.

The ever popular Pentstemon Southgate Gem, with its blood-red flowers with white throats, fills an oval bed, and among these are planted six standard Fuchsias of the variety Lena.

A pleasing contrast in colours is seen in a bed of the two Mignon Dahlias, Coltness Gem and H. J. Jones, now at their best. The yellow variety is a little taller than its red companion and fills the centre of the bed. Another bed is formed of the variety H. J. Jones and a taller, terra-cotta scarlet variety named Trixie.

The deep, plum-coloured Perilla nankinensis has been very well placed in front of a golden Privet hedge, where it shows to full advantage.

At the side of the Park is a large bed of standard Fuchsias among which are planted seedling Cannas with red-brown leaves, and the whole has a bold, double edging of Pelargoniums Golden Fleece and Silver Queen.

Among a splendid exhibition of Dahlias, the varieties Paul Crampel and Our Annie are outstanding. The former is of the decorative type and semi-dwarf. Its habit, together with the splendid bright terra-cotta red colour of its flowers, renders it an excellent subject for massing in a large bed. The delicate pink and yellow shades of Our Annie are very pretty ; it is a small, Paeony-flowered variety. Lemur, with deep blood-red flowers and dark foliage, would be more useful if it were easier to propagate, for it does not develop many shoots suitable for use as cuttings.

Carpet bedding, in another part of this park, is popular with the public. The plants used include Alternanthera The Jewel, with dazzling red foliage ; A. aurea, yellow, and also a red-brown variety of the same species; Spergula pilifera and its yellow variety aurea and, among grey-foliaged plants, dwarf incrusted Saxifrages, a Mesembryanthemum, Kleinia repens, which is a dwarf succulent plant with almost cylindrical leaves; Echeveria Dusty Miller, and E. Peacockii, which has a margin of red to its glaucous leaves.

This little north-west London park is well worth a visit at any time during the spring or summer, for it is always bright, and one feels that the results are the rewards of keen and skilful industry. *D. B.*

It may surprise many of our readers to learn that Manchester has no fewer than seven hundred employees on the permanent staff of the Parks and Cemeteries Department to manage the 2,000 acres of public pleasure grounds which are distributed over eighty areas. The park staff runs a horticultural society of its own and is able to publish each year an interesting *Journal*, of which the issue for 1927-28 is before us. The *Journal* has as its frontispiece a portrait of the Superintendent, Mr. W. W. Pettigrew, V.M.H., reproduced from a drawing by Mat. Although more or less a caricature, all who know Mr. Pettigrew would recognise at once his characteristic attitude and puckered brow—altogether a striking portrait of this very capable and most lovable of men. The editor has given a somewhat full biography of this noted park-keeper, who recently received the highest honour in the horticultural world, that of the Victoria Medal of Honour.

Mr. Pettigrew is only fifty-nine years of age, yet he has had a wide experience, and long before he took up his duties at Manchester he was a prominent figure in the horticultural world. During the twenty-three years he was chief of the Cardiff parks, he laid out five parks and numerous open spaces, and built up a department with a permanent staff of about one hundred. He went to Manchester in 1925, and we trust that he will be spared for many years to continue in that important office.

A number of short articles, such as "Park Systems Extensions," by Mr. L. E. Morgan; "The Culture of the Perpetual-flowering Carnation," by Mr. A. Birkinshaw; "Trees and Water Supplies," by Mr. A. Edwards; "The Development of the Rhododendron," by Mr. F. Harding; "The Use of Dot Plants in Bedding," by Mr. G. Cule; "Flower Gardening in Grass," by Mr. G. Haig, and others show that the *Journal* is valuable as well as interesting. The Society is fortunate in having some of the most prominent gardeners and specialists in particular subjects on the syllabus of the lectures for the winter session, and we are pleased to notice that these lectures are open to all interested persons, whether members of the Society or the Parks Department. There is also a syllabus of classes for students during the months of October, November, December, January, February and March. The *Journal* may be obtained from the Hon. Secretary, Mr. L. E. Morgan, Guildhall Chambers, 38-40, Lloyd Street (Albert Square), Manchester, price 1s. 2d., post free.

The Ministry of Health has held an enquiry at the Council Offices, Camberley, into an application by the Frimley Urban District Council for sanction to purchase land on the Watchetts Estate for a recreation ground.

Hornchurch Town Council has purchased Hylands Park at a cost of £2,500 for a recreation ground.

The Urban District Council of Shelf will make application to the Ministry of Health for an Order respecting the conversion of the Denholme Gate housing site into a pleasure and recreation ground.

The Urban District Council of Brentwood, Essex, has approved the purchase of about twelve acres of land, at a cost of £2,000, for the provision of playing fields and a recreation ground.

Chesterfield Town Council has made application to the Ministry of Health for sanction to borrow £9,960 for the laying-out, fencing and providing necessary equipment for seven recreation grounds.

Llandudno Urban District Council has agreed to offer £5,000 for the purchase of the Haulfre estate on the south-eastern slope of the Great Orme for public pleasure grounds.

GREASE-BANDING FRUIT TREES.

Grease-banding is an old and well established garden and orchard practice. Within the last year or so it has been stated that with modern insecticides and the improved spraying apparatus now at our command, grease-banding is no longer necessary. On gardens and farms where a full spraying programme is carried out each year, this is undoubtedly true, but such gardens and fruit farms are few and far between.

In the light of the above paragraph, it can do no harm to review the advantages and limitations of grease-banding fruit trees. The caterpillars which cause serious damage to Apple, Pear and Plum foliage in early spring are generally of the following kinds: Winter Moth (Cheimatobia brumata), Mottled Umber Moth (Hybernia defoliaria), March Moth (Anisopteryx aescularia), Tortrix Moths (Tortrix sp.) and Bud Moth (Hedya ocellana). These moths fall very naturally into two groups, the first three, Winter, Umber and March Moths, form group No. 1, because the females of each do not possess wings which are of the slightest use for flying purposes. The Tortrix and Bud Moths form the second group because both sexes are fully winged.

Grease-banding has for its object the trapping of the so-called wingless females of the first group, and, of course, can have no control over the fully winged females of the second group. In conditions where both groups are common, grease-banding can only hope to control a portion of the trouble, and it becomes necessary to spray the hosts with an insecticide in the spring, and it would seem as though the grease-banding operation might be left out altogether. At the same time it should be remembered that some caterpillars hatch very early in the season and much damage is often done to the young buds and flower trusses before the average gardener thinks about using an insecticide and, in my experience, it is the caterpillars of the No. 1 group which are responsible for this very early damage. In this connection one finds, too, that it is the caterpillars of the Winter Moth that do most of this early damage. I do not find that Umber and March Moth larvae do much damage to bud growth, but that they confine their attention more to the foliage.

Another point which is often advanced in connection with grease-banding is that it is very successful with standard trees, but that it is not so with bush fruit trees, because, in the former type of tree the band may be placed well away from the ground, while in the latter the band must be placed very near the ground level. The low banding of fruit trees has two serious disadvantages. One is that when bands have to be placed near to the ground level many of the wingless females get over the bands; how they do so has never been ascertained, but it has been suggested that the males are able to carry the females short distances when in the act of pairing. This fact has not yet, I believe, been observed, and it requires actual observation before being accepted as true. The second disadvantage is that when the trees to be banded are growing in open land, low bands become splashed with soil, and many of the moths can get over the soiled bands. This appears to be the most probable means whereby the females get over the bands. Perhaps, some day, an observer will be able to definitely clear up this point, but until this happens we can only guess. If it is true that low bands on trees grown in open soil are very largely useless because of soil splashing, would it not be a practical proposition to straw down the soil around the stem before the band was put into position? We use this practice freely on our Strawberry beds to keep rain from splashing the fruits and making them gritty, and I think the idea would work in connection with grease-banding.

When discussing the grease-banding of standard and bush fruit trees, it is usual to point out that with the machine generally available (a knapsack) it is easy to spray bush trees for caterpillars but not so easy to do standard trees. This fact should be kept in mind when deciding to band or not to band.

I wonder if I dare mention another point in connection with banding! Grease-banding is not and cannot be a control measure for Codlin Moth (Cydia pomonella). I have met many who, when talking about "maggotty Apples" have said, "this maggot takes half my crop each year, and I grease-band every autumn, but with no effect." The confusion no doubt, arises because bands of a different type are recommended as a control measure for Codlin Moth, and those concerned have "got mixed." Hay or sack bands placed in position in June will trap many of the larvae of the Codlin Moth, but the pests have all got safely into their winter quarters before grease-bands are put into position.

To sum up, I think all will agree that grease-banding is a valuable aid in the control of a large proportion of caterpillar attack in spring. It is successful if care is taken in placing the bands in position early enough to trap the first moths which emerge and in keeping the bands in a tacky condition until the end of March. Grease-banding is valuable, too, because it prevents early bud damage. Standard trees are more successfully banded than are bush trees, but this is cancelled out by the greater ease with which bush trees can be sprayed with an insecticide in spring. The grave disadvantage is that it is often necessary to spray fruit trees in spring for caterpillars which are not controlled by grease-banding, but in spite of this, I think it pays to grease-band.

I have tried to point out in a previous note that if grease-banding is to be a full control, the eggs which are laid on the main stem, from the band down to the ground level, should be destroyed when the bands are removed in March. There are many who always leave the bands in position until the following autumn; this is bad practice. All grease-bands should be removed and burnt at the end of March, and the main stems of the trees thickly lime-washed to deal with the eggs laid thereon. *Somerset.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 271).

MIDLAND COUNTIES.

Staffordshire.—In the middle of April there was promise of abundant crops of all kinds of fruits, but the severe frost at the end of this month destroyed the prospects. Plums were set and about the size of Sweet Pea seeds, but nearly every one was killed. Pear trees were in full bloom and the flowers were frozen. A few late flowers have set some fruits. Bush fruits escaped injury very well. The early flower trusses of Strawberries were killed, but the later blooms set a fair crop. Insect pests have not been so bad as in some years, and the trees are making good, clean growth. Taking the fruit crops all round, I have had many worse crops than in 1927. The soil is a deep, stiff clay. The garden slopes to the south and is well protected from east and north-east winds. *J. W. Miskin, Woodseat Gardens, Rocester.*

——The fruit crops are the most disappointing I have ever known. Apple trees were laden with blossoms, but, owing to the late frosts, the fruits dropped badly. Pears, also, have fallen freely. Bush fruits have been fairly good, but Strawberries, owing to excessive rains, were tasteless and the frost destroyed all the early bloom. Our soil is of a light texture and overlies gravel and rock. *Edwin Thos. Gilman, Hillside, Rugeley, Stafford.*

WARWICKSHIRE.—I never saw a better display of fruit blossom, but severe frosts at the end of April and early in May spoiled the prospects of a good fruit season. The frosts were followed by a wretchedly cold, sunless month. Pears promised well, but Marie Louise d'Uccle alone is carrying a full crop. Apples yielding well are Alfriston, King of the Pippins, James Grieve, Potts's Seedling and Warner's King. We have no fruits of Bramley's Seedling or Lane's Prince Albert. Bush fruits were very good. Rain came in time to save the Strawberry and Raspberry crops. Our soil is a heavy clay on limestone. *Charles Marchment, Moreton Hall Gardens, Moreton Morrell.*

——We had plenty of strong Apricot blossom but the flowers were completely ruined on March 24 by a severe hailstorm, though the trees were under protection. The storm was followed by a wet and stormy period, with snow on the 31st of that month. A magnificent show of fruit blossom generally was ruined by a series of frosts from April 26 to Sunday, May 1; during these dates we registered 4°, 5° (with snow), 2°, 4°, 12° and 5°. On May 4 it was extraordinarily hot, the thermometer registering 79° in the shade, with thunder. What few Strawberry blossoms were left were completely ruined by the very wet weather. The peculiar thing to me is, although Apples, Pears, etc., were so badly damaged, all small fruits were extraordinarily good. A few bushes of Currants and Gooseberries were ruined though the adjoining bushes were not damaged in the least. The soil is of a light, sandy nature overlying sand. *Burton Gaiger, Wellesbourne House Gardens, Warwick.*

——The prospects for a good yield of fruits were exceptionally good until April 29-30, when a severe frost occurred with serious consequences. Pears and Sweet Cherries were practically wiped out. Apples and Plums were severely thinned in most districts, but on high ground or in sheltered positions very little damage was done; consequently the fruit crops are patchy and very difficult to estimate. Fortunately, small fruits, with few exceptions, escaped serious injury, and owing to the copious rains of June, growth has been free from aphis and the fruits attained good size. All crops require thinning. *H. Dunkin, 86, Emscote Road, Warwick.*

——The fruit crops are very disappointing. There was a splendid show of blossom on nearly all fruit trees, but the cold nights and frosts during May seriously injured everything. We registered 6°, 8° and 14° of frost during the last week of May. Strawberries, Raspberries, Black Currants and Pears in the open suffered most. We have a fair sprinkling of Apples and Plums on trees in sheltered positions. In the market gardens of this district it is extraordinary that some Plum orchards are carrying good crops while in others near by there is hardly a Plum to be seen. *A. E. Moss, Billesley Manor Gardens, Alcester.*

——The fruit crops are very irregular; for instance, some Plum and Apple trees only a few hundred yards from this garden are simply laden with fruits, whilst others, and apparently quite as much sheltered, are bare of fruits. Raspberries were a splendid crop, also Black and Red Currants. Gooseberries were thinned by the late frosts, but still the crop was an average one. Cherries were of good quality and clean. The soil is clay resting on clay and difficult to work, but all vegetables and fruits give good and healthy crops. *James Page, Moreton Paddox Gardens, Warwick.*

——From the amount of blossom, I had hoped this year to have reported favourably on the fruit crops, but very severe frosts—10° to 15° on April 29, caused damage to the blossom generally, and more particularly to that of Strawberries, Plums, Pears, Gooseberries and Currants. The Strawberry crop was the worst for many years. Apart from damage by frost, the plants of many Strawberry beds in this neighbourhood seem to have deteriorated and have given cause for some anxiety. The Apple crop is much better than I expected; trees of Cox's Orange Pippin, James Grieve, Worcester Pearmain and Lane's Prince Albert are carrying quite good crops. Bramley's Seedling, Lady Sudeley and Beauty of Bath are almost a failure, but on the whole there is a good average crop of Apples. *H. F. Smale, Warwick Castle Gardens.*

——Pear blossom was almost ruined by late frosts, which also destroyed the first flower trusses of Strawberries. Early Peaches were also badly cut by the frosts, although late Peaches escaped, as did also Nectarines. Small fruits were exceptionally good. The soil is light and gravelly and the gardens are situated 400 feet above sea-level. *John Samuel Buckby, Bilton Grange Gardens, Rugby.*

(To be continued).

FRUIT GARDEN.

NUTS.

A GOOD variety of the Hazel Nut provides a most welcome addition to the winter supply of dessert, and the cultivation of Nuts or the formation of a Nut orchard may add considerably to the amenities of the garden.

Planting is best performed in October or November, the earlier month for preference, the space allowed each individual plant being governed to a great extent by the variety, but from ten feet to fifteen feet each way may be accepted as a good average distance.

The crops may be considered as permanent, therefore the soil should be prepared thoroughly by trenching and manuring; a good loam and a somewhat dry, sunny situation offer ideal conditions, resulting in the production of short, fruit-bearing wood.

Pruning is of the greatest importance in the successful cultivation of Nuts; not earlier than March, and sometimes even April, is the best period for pruning, as then the female blossoms will be fully open; the plants bear on the lateral growth of the previous summer, therefore the necessity of stopping young and vigorous growths to ensure the development of such shoots will readily be understood, and at the same time it will be well to remove a great deal of the old wood that has borne fruit. In former times, Nuts were frequently trained in the shape of a vase.

Propagation is effected by suckers, layers or by seeds, whilst grafting and budding have been resorted to for the perpetuation of choice or scarce varieties; for all ordinary purposes, suckers and layers offer the most convenient methods of increase, and for the production of layers, "stools" must be maintained. Except when required for propagation, suckers should be removed, and of these Filberts usually produce an abundance.

The maturity of a Filbert or other Nut may be ascertained by the rich brown colour of Nut and husk and by the readiness with which the Nut will part from the latter; before storing, it is necessary to thoroughly dry the Nuts, and they may then be placed in stone jars or in casks and kept in a cool, dry place.

The Nut orchard may well be accorded a prominent position in the garden and rendered singularly attractive by the naturalisation within its precincts of certain bulbs. Narcissi are particularly appropriate, and Cyclamen cannot be envisaged in a more suitable environment than amongst the stems of Hazels. A Nut walk is a delightfully pretty adjunct to a garden, and I possess very happy recollections of such an one; a grass walk with the Nut bushes on either side, their boughs arching overhead and, in spring, innumerable Daffodils—a very pretty and very English picture. Many bulbs are quite happily placed in the Nut plantation, which indeed, may become a very lovely and most interesting garden feature.

The best varieties of Nuts should be planted and of these the following is a careful selection:—Merveille de Bolwiller, a large, handsome Nut, of good flavour, which was first cultivated about 1840, being introduced by Messrs. Baumann, of Bolwiller; Cosford, a large, round Nut of excellent flavour with a thin shell; Kentish Cob, very prolific and of fine flavour, largely grown for market, and sometimes known as Lambert's Filbert, a gentleman by that name being responsible for its introduction somewhere about 1830; Kentish Filbert is a long and pointed Nut of sweet flavour that produces but few catkins, so that a good pollen producer should be planted with it (Cosford or Prolific Filbert); Duke of Edinburgh is a large and quite good Nut, raised by Mr. Webb, of Calcot, and introduced in 1883. Other first-class varieties are Red Filbert, Prolific Filbert and Pearson's Prolific, whilst the Purple-leaved Filbert is a handsome variety of the common Filbert with leaves, husks and shells displaying purple coloration, the Nuts somewhat small but of good flavour. The White Filbert and the Downton Large Square are also worthy of notice.

The crop is subject to injury by the Nut weevil, which pierces the young Nut in spring and inserts a single egg; this, later, forms into a small grub, eats itself out of the Nut, falls to the ground and, burying itself, emerges a perfect insect the ensuing season. Any perforated Nuts that may be shaken off early in the season should be gathered and burnt.

The squirrel is destructive to the Nut crop, as also is the Dormouse. Nuts may, with advantage, receive more general and better cultivation than is usually the case. *A. C.*

VEGETABLE GARDEN.

A VARIETY TRIAL OF POTATOS.

I HAVE just completed an interesting variety trial of Potatos. As the varieties were grown under precisely similar conditions they afford reliable and valuable evidence of cropping capacity. The soil in which the trial was conducted is a good medium loam to the depth of eighteen inches; it was dug to the depth of one foot during the winter of 1926-27, and dressed with farmyard manure at the rate of twenty tons per acre at the time of digging.

Owing to the vigour of the growth, no artificial manures were applied. Scotch seed sets having a grading of two-and-a-quarter inches by one-and a-quarter inch, were used throughout the trial. The tubers were planted during the second week in April at a distance of fourteen inches apart, in drills which were drawn twenty-eight inches asunder; 7 lbs. of seed sets were used of each variety.

The following table gives a list of the varieties grown, together with the yields:—

Variety.	Ware.		Chats.	
	lb.	ozs.	lb.	ozs.
Culder's Castle ...	104	6	2	8
Royalty	101	10	5	7
Field-Marshal ...	101	1	3	7
Long Keeper ...	98	10	6	1
Dreadnought ...	94	13	5	3
Red King	90	1	6	2
Adirondack ...	50	2	8	12

As the length of drill was fifty feet in each instance the above table shows that every variety, save Adirondack, has a useful cropping capacity. The latter variety revealed mosaic disease in the early stages of growth, and the low yield supplies eloquent evidence of its paralysing effect. The appearance and cooking quality of the six satisfactory cropping varieties should help to establish them in the favour of gardeners everywhere. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

Blue Tits and Plums.—On page 252 of your issue of September 24, in an article on "Plums on Walls," there is a reference to the damage done to fruit by blue tits. If the writer will refer to Dr. Collinge's *The Food of Some British Wild Birds*, he will see that a large number of post-mortem examinations have shown that these birds eat large quantities of aphides, scale insects, etc., and that, although they do peck holes in ripe fruits, their presence in a garden is distinctly beneficial. For some years we have encouraged all the tits here and watched them collecting food from the trees in the spring, but have never seen any trace of fruit being attacked. I do not think that gardeners always appreciate the good done to gardens by birds. *W. H. Nicholls, Shore Croft, Hatherton, Cannock.*

Clogs for the Garden.—Many years ago, when in Lancashire, I rather pitied the vast army of people who wore clogs, as it seemed to me that they must be hard, uncomfortable and heavy. However, finding ordinary boots of a type substantial enough for the garden utterly unwearable as they hurt my feet badly, I tried a pair of light clogs with low uppers, and was astonished and delighted to find they kept my feet dry and comfortable, and were far easier to wear than boots. Clogs are not quite the thing for long outdoor walks, but for field or garden use there is nothing better or more comfortable. They are cheap, but the leather in them is not so good as it should be for resisting wet and must be kept well oiled. There is no reason, however, why one should not have a pair built of better leather. No gardener who has once used clogs will go back to boots for use in his work. I am very enthusiastic in advocating clogs, after years of experience of them in my own garden. *W. J. Farmer, Redruth.*

Erica vagans var. Mr. D. F. Maxwell.—Referring to Mr. Johnson's remarks on Erica vagans and its varieties (p. 211), while I agree that E. v. St. Keverne is a very fine variety, I cannot agree that E. v. Mr. D. F. Maxwell is not a rival. I think the latter is the "peer in its own way," and I feel sure that most people will agree with me. Perhaps, as it is not so old or so common as E. v. St. Keverne, it is not yet so well-known, but once seen, I feel sure everyone will want it. *G. H. Dalrymple.*

Araucaria Bidwillii in the Open.—In the gardens of Henapyn, Torquay, there is a very fine specimen of the "Bunya Bunya" Pine, Araucaria Bidwillii, twenty-five feet high. I understand this tree was planted by Sir Arthur Bigg. This is the first time I have seen Araucaria Bidwillii growing out-of-doors in this country; it would be of interest to learn whether another plant exists in the open in England. *F. G. Cousins, Parks Superintendent, Torquay.*

Edible-Podded Peas.—I have a long row of Carter's edible-podded Sugar Pea named Melting Marrow, growing ten feet high. This is a good Pea to grow where one is troubled with tits (which get through ordinary garden netting), as the pods are gathered before the Peas swell, and they are as fine in flavour as the Peas from ordinary varieties.—*J. T. Weston, The Gardens, Hatchford End, Cobham, Surrey.*

Tall Sweet Peas.—I am wondering if any of your readers have Sweet Peas growing taller than mine, which are eleven feet six inches high, have flower stems from ten to eighteen inches long, and blooms one-and-a-half to two-and-a-quarter inches across. The plants have been in bloom since the first week in July; they are trained up stakes and have had the side-shoots pinched out. Also, have your readers heard of Apples occurring on trees the same year as grafted? I grafted one last April with two kinds of Apples and two grafts flowered, one setting three fruits and another one fruit; the fruit is now about the size of a tennis ball, and the variety is Laxton's Superb. *J. T. W.*

Cupressus macrocarpa.—About thirteen years ago a gentleman, then resident at Falmouth, called on me because he was interested in some of my published notes on garden matters. He was a very interesting visitor, and before leaving, he suggested I should plant Cupressus macrocarpa as a shelter belt. He obtained seeds and raised the plants himself, and a year later along came a packet of tiny Cypress trees, each about three inches long. I planted them out in a bed in my garden, and after a year's growth they were big enough to go into their permanent places, where they were planted three feet apart. Now, after thirteen years, they are about twenty-five feet high and very thick stemmed. They have mostly grown up tall and straight, but a few are throwing out rather long laterals which will be cut back. It is amazing to see how these little seedlings that would have fitted into my waistcoat pocket have made a very long, tall hedge that effectively checks the gales from the Atlantic, only two miles away. I greatly regret that I do not know the whereabouts of the donor, but I hope this note may find him. *W. J. Farmer, Redruth.*

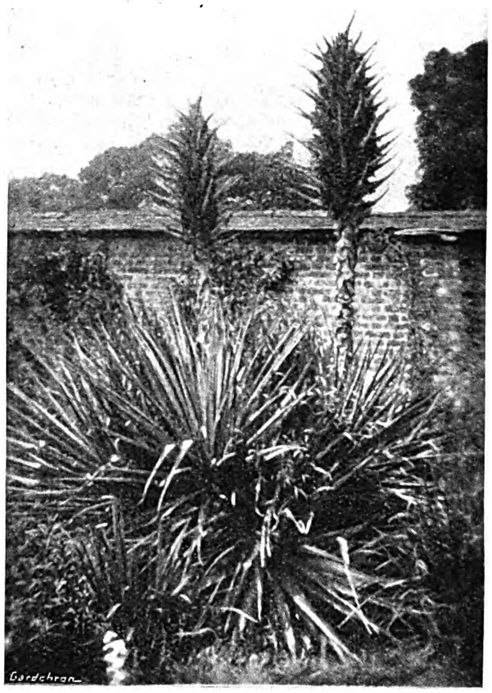

FIG. 133.—PUYA CHILENSIS AT TREGYE.

Puya chilensis.—This very remarkable species was first introduced into England in 1820. Our plant is illustrated in Fig. 133, and was grown from seeds brought from Chili in 1900. It was kept in a pot for sixteen years and then placed in the open border. It flowered for the first time in 1926, producing one flower spike; this year it produced three spikes and one of these gained a Bronze Medal at the Royal Cornwall Show; the illustration shows the two remaining spikes (average fifteen feet high) *(Mrs.). E. P. Rogers, Tregye, Devoran, Cornwall.*

Rubber for Tool Handles.—Secateurs, when purchased, are often anything but smooth to the grip, the metal handles being ridged with fairly sharp lines. There are other tools also that are uncomfortable, raising blisters when much used, but secateurs are the worst, and very often one may have to use them continually for a whole week. I have got over the trouble by obtaining some India-rubber tubing of the type used for gas connections, and forcing it over the metal handles. The slight outlay and trouble has been amply repaid by the comfort obtained and the freedom from galls or blisters, and I wonder why in all the previous years the thought never before occurred to me to use rubber in this way. *W. J. F.*

SOCIETIES.

ELGIN HORTICULTURAL.

This exhibition of this Society was originally fixed for August 10 and 11, but the unfavourable season led to a postponement till September 7. The number of entries in all classes constituted a record, especially in the vegetable sections, and a high standard of quality, despite the adverse season and the heavy windstorm experienced a few days before the show, was maintained. The Countess of March, wife of the heir to the Duke of Richmond and Gordon, opened the exhibition.

For the best two greenhouse plants, distinct, Mr. J. H. Munro, Forres, excelled with remarkably well-grown specimens. He also led for Pelargoniums with beautifully coloured blooms. From the Asylum Gardens, Elgin (gr. Mr. John McLaren), came wonderfully good Fuchsias and choice Adiantums. Mr. Alexander Simpson, Elgin, showed the best two plants distinct. Mr. M. A. Masson, Sunnyside, Elgin, and Mr. Charles Asher, Craigowan, Fochabers, led finely for Ferns. Begonias and Aspidistras were best exhibited by Mr. J. Smith, Glenmoray, Elgin, while Mr. James McBean, Bishopmill, and Mr. Mackenzie, Alves, had the best Hydrangeas and Chrysanthemums, respectively.

From Brodie Castle Gardens (gr. Mr. J. Annand) came the finest perennials, annuals, Begonias and Chrysanthemums. The Earl of Moray, Darnaway Castle (gr. Mr. A. S. Dow), led for Antirrhinums and Stocks. Mr. T. L. Mann, Elgin, was first for Gladioli, and from Newmill Gardens (gr. Mr. A. E. Ross), came the leading Pentstemons. Mr. James McIntosh, Rosehill, Aberdeen, met with remarkable success over the redoubtable Sweet Pea grower, Mr. J. A. Grigor, Woodlands, Banff. Mr. McIntosh was awarded the leading honours for the best twelve vases, distinct varieties, and was awarded the Silver Rose Bowl presented by Mr. R. G. Mann, Bridge Park, Selkirk, for most points for Sweet Peas in the respective classes, and he also won the Silver Medal presented by Mr. T. L. Mann, Elgin, for the best vase of Sweet Peas in the show. The latter was won by a fine vase of the Hebe variety. But although beaten for the blue riband, Mr. Grigor was first for six vases, distinct varieties, three vases, a vase of purple, and a vase of twelve sprays. The last was among the special classes, and the prize was given by Mr. John Smellie, Helensburgh, the well-known grower. There were also prize-winning blooms from Brodie Castle (gr. Mr. J. Annand), the best vases of lavender, white and scarlet varieties coming from there. Mr. J. MacDonald, Cairnfield, Buckie, who won second and third prizes in several of the classes, was first for a pink variety with a beautiful vase. For six vases of grandiflora Sweet Peas, scented, Mr. J. Ferguson, Burgie Gardens, won the Medal presented by Mrs. Thomson, Burgie House. The Gold Medal offered by Mr. H. Stewart Paton, of Messrs. Austin and McAslan, nurserymen, Glasgow, for the twelve best Rose blooms (confined to the counties of Moray and Banff), was worthily won by a fine entry from South College Gardens (gr. Mr. R. Hepburn).

Fruit was the most backward section in the whole show, the effects of the untoward season being evident. From Brodie Castle came the leading dishes of Apricots, Peaches and red Gooseberries; while Darnaway Castle furnished the best Plums, Black Currants and Red Currants. Moy House Gardens provided the leading dishes of dessert Apples and Raspberries. Grapes were not plentiful, those from Mr. C. Stuart, Forres and Moy House being the best.

Vegetables were exceptionally good. For a collection in eight varieties, the leading awards were taken by Brodie Castle, Darnaway Castle and The Asylum, Elgin (gr. Mr. John McLaren). The largest number of prizes in this division went to Brodie Castle.

Some capital exhibits were shown by amateurs, and it was an Aberdeen amateur, Mr. James McIntosh, Rosehill, Aberdeen, who won the blue riband for Sweet Peas in a class open to all.

Trade exhibits were shown by Mr. Mann, Florist, Elgin; Messrs. Austin and McAslan, Glasgow, and Messrs. Allwood Bros., Wivelsfield.

NORTH OF ENGLAND HORTICULTURAL.

Although no money prizes were offered, the exhibition of the North of England Horticultural Society, held in the Winter Gardens, Harrogate, on September 14, was a great success. Roses were exhibited in fine style and condition, and the attendance was good. We understand there has been a material increase in the number of fellows of this Society of late. The exhibition was opened by Mrs. C. W. Whitworth, Mayoress of Harrogate, who made a charming and appropriate speech before declaring the exhibition open.

Medal Awards.

Large Gold Medal.—To Messrs. Dickson and Robinson (with Harrogate Corporation Cup), for Dahlias; Messrs. Samuel McGredy and Son (with Ogden Cup), for Roses; Messrs. G. Gibson and Co (with Whitehead Cup), for shrubs, Lilies, Roses and herbaceous plants; and Messrs. Mansell and Hatcher (with Kathleen Pilkington Cup) for a collection of Orchids.

Gold Medal.—To Messrs. Alex. Dickson and Sons, for Roses; Messrs. John Peed and Son, for a group of plants; and Mr. Thos. Robinson, for Roses.

Large Silver-gilt Medal.—To Messrs. Daniels Bros. (with Penrose Green Cup), for a collection of fruit; Messrs. Kent and Brydon, for herbaceous plants; Messrs. W. and J. Brown, for Roses; Mr. Charles Gregory, for Roses; Mr. Alva J. Hall, Harrogate, for Ferns; Messrs. C. Engelmann, Ltd., for Carnations; The Backhouse Nurseries (York) Ltd., for rock plants; and to Mr. W. Wells, for herbaceous plants.

Silver-gilt Medal.—To Messrs. Pennell and Sons, for a collection of fruit; Mr. Parsons, for fruit; Mr. J. Mallender, Scrooby, Doncaster, for Tritomas; Mr. P. Gardner, for table rockery; Messrs. Whitaker and Wilson, for Gladioli; Messrs. W. H. Simpson and Sons, for hardy flowers; and Messrs. Hewitts, Ltd., for Delphiniums.

Large Silver Medal.—To Messrs. J. H. White and Co., for a collection of fruit; Col. Tetley, Knaresborough (gr. Mr. F. Owram), for vegetables; Messrs. T. G. Tickler, Ltd., for a collection of fruit and bottled fruit; Messrs. Allwood Bros., for Carnations; Messrs. Bakers, Ltd., for herbaceous flowers.

Silver Medal.—To The Unity Allotments, Harrogate, for a collection of vegetables; Messrs. Harkness and Sons, for hardy flowers; Mr. W. Kershaw, for hardy flowers; Messrs. Bowell and Skarratt, for alpine plants; Miss Florence Green, Moortown, Leeds, for trained shrubs; and to Messrs. Maxwell and Beale, for table rockery.

Bronze Plaque.—(With Cultural Commendation), to the Rev. C. Gallacher, Harrogate, for Gloxinias and Streptocarpus.

Award of Merit.—To Messrs. Mansell and Hatcher, Rawdon, Leeds, for Cattleya Canberra, Rawdon variety.

In the fruit classes, first prizes were awarded to Mr. J. E. Hathaway, Baldersby Park Gardens, Thirsk (with Webster Cup); Capt. Compton, Newby Hall, Ripon (gr. Mr. A. Mason), and to Mr. H. Metcalfe, Crimple Junction, Harrogate; Mr. J. K. Woodmansey, Knaresborough, was second to the last-named competitor.

HAARLEM DAHLIA SHOW.

The annual Dutch Dahlia exhibition took place this year from September 9 to 11, in the Concert Hall, at Haarlem. Four rooms were occupied by the show, of which one, an upper room, was set aside for novelties. The opening ceremony took place at 2.30 on the 9th ult., and the first speech was made by Mr. E. Th. Witte, the President of the Dutch Dahlia Society, who reminded his hearers that five years ago the Dahlia Show also took place at Haarlem. He mentioned the fact that Dutch growers were now so much to the fore in Dahlia producing that the German borders were closed to Dutch-grown Dahlias for exhibition; and the fact that a Dutch grower, even if he were a member of the German Dahlia Society, was prohibited from taking his Dahlias to the exhibition, was a proof of the fear of the German growers of Dutch competition.

The general impression made by the show was a very fine one; the exhibits were arranged so as to present a good ensemble, and yet give to each group its due weight and importance. It might, however, have been an improvement if the centre of the hall had been kept free of all but low plants, so as to yield an uninterrupted view from top to bottom. As it was, some tall Palms had the effect of obstructing the view. At the entrance of the large hall was a fine group of florists' work by Mr. C. van Empelen, of Heemstede, who used not only Dahlias, but also Roses, Cattleyas, etc., to produce a very pleasing effect. Near-by was the group of the firm of Messrs. K. van Bourgondiën and Sons, of Hillegom, including a large number of the large-flowered American varieties, such as Jersey Beauty, Robert Treat, and Earle Williams. The exhibitors were far too numerous for all to be mentioned by name, but the group of an amateur society known as "Eigen Tuin" (or "Own Garden") may be cited; the quality and arrangement of the exhibit left something to be desired, but comparison between this amateur group and the exhibits of professional growers is scarcely fair to the former. The new varieties were numerous, but not many were considered worthy of an award. The Hornsveld Cup was awarded to Mr. H. Carlee, of Haarlem, for a fine lilac variety, Hera, but only three growers entered in this class.

GLASGOW AND WEST OF SCOTLAND.

This show was held, for the second year in succession, in the limited accommodation of St. Andrew's Halls, on Wednesday and Thursday, September 7 and 8. In view of the loss sustained in 1926, the schedule was curtailed by the exclusion of less popular classes and the entries were some four hundred fewer in consequence. This reduction enabled additional space to be allotted to the trade exhibits, which were more numerous and varied than was the case last year.

The hall was densely packed at the opening ceremony which was performed by Miss Buchan (O. Douglas, of literary fame), who was accompanied by her brother, Col John Buchan, M.P.

The schedule consisted of 286 classes which were distributed over five separate halls. Pot plants were well represented, and the chief honours in the gardeners' and amateurs' classes were shared by Mr. Allan Dunbar, Belmont, Springburn (three Palms, twelve plants for table decoration, six plants for table decoration, six Nephrolepis, two ornamental foliage Pelargoniums and two pots of Liliums); Mr. John Welsh, Glasgow (stove or greenhouse plants, greenhouse plants in flower, three British Ferns and three scented-leaved Pelargoniums); Mr. William Chorley, Irvine (Orchids and Begonias); Mr. Claude Jenkins, Cambuslang, (Fuchsias, tuberous Begonias, Chrysanthemums and one Petunia); Mr. James Templeton, Dowanhill (Palm and three ornamental foliage plants); and Mr. Peter Aitken, Bathgate (alpines).

The Rose classes were well filled and competition in the open classes was keen. Messrs. D. and W. Croll, Dundee, excelled in the class for twenty-four blooms of which the crimson varieties, George Dickson, Capt. Kilbee Stuart, Earl Haig and Lieut. Chaure were prominent, while Dame Edith Helen, Noblesse, and Mrs. Henry Bowles, contributed beauty to the exhibit. The same firm also excelled in the class for twelve blooms of red Roses with Earl Haig, and twelve blooms of white or cream Roses with Louise Crette. Mr. R. C. Ferguson, Dumfermline, excelled with four baskets of decorative Roses, consisting of Los Angeles, Betty Uprichard, Crimson Emblem and Mrs. John Laing, and he was also placed first for twelve blooms of a yellow Rose with Mabel Morse, and twelve blooms of any other variety with Gorgeous. Messrs. Adam and Craigmile, Aberdeen, were successful in the class for twelve blooms of a pink Rose with an outstanding dozen of Mrs. Henry Bowles. In the amateurs' section, Messrs. D. Murchison, Kirn, Jas. Paterson, Leamington, Alex. Hay, Bathgate, and Mrs. Russell, Newton Mearns, were prominent in the prize list.

Sweet Peas were not so numerous, and the exhibits were somewhat irregular in quality. Mr. John A. Grigor, Banff, followed up his success at Southport by winning in the classes for eighteen and twelve vases, and he was also first in the single vase classes for pink, orange-pink and purple, with well-grown specimens of Sunshine, Crusader and Olympia. Mr. James Logan, Cumnock, had three first prizes to his credit, and Mr. Alex. McMillan, Cumnock, staged the best six vases and three vases of Sweet Peas. The latter also excelled for border Carnations, and the remaining honours in that section were won by Mr. Charles Traill, Gourock; Mr. Arthur Ross, Kilmarnock; and Mr. James Smith, Darvel.

Owing to the late season, Chrysanthemums attracted fewer competitors, of whom Mr. James Nisbet, Busby, and Mr. Claude Jenkins, Cambuslang, obtained five first and four first prizes respectively.

The classes for herbaceous flowers were exceptionally strong, and the exhibits occupied the staging on one side of the hall. Here Mr. James Currie, Barskimming, Mauchline, excelled with six vases of hardy herbaceous flowers, distinct varieties, and six vases of flowers cut from the open, while Mr. J. W. McKinnon, Ballochmyle, Mauchline, showed best in the class for four vases.

A feature of the Dahlia section was the grand show of Collerette varieties. Perhaps the finest blooms in the section were to be found in the six vases consisting of Glen Sannox, Glenmore, John Smellie, Rona, Brilliant and Kangaroo, which secured the first award for Mr. James Jack, Dumbarton, and Messrs. Torrance and Hopkins had an equally meritorious group in the class for four vases. Mr. Alex McColl, Renton, overcame all opposition in the Cactus class, while Mr. Claud Jenkins staged the best Pompon Dahlias. The Cambuslang competitor also furnished the first prize Antirrhinums.

Messrs. Mair and Son, Prestwick, maintained their reputation as exhibitors of Gladioli, but as they only competed in the class for nine vases, Mr. David Whitelaw, Laurencekirk, had no difficulty in securing the honours in the remaining three classes.

Keen interest was taken in the extensive display of Pansies and Violas, where Mr. James Paul, Killearn, succeeded in five of the nine classes, but he was defeated in the classes for show Pansies by Mr. James Hyslop, Leadhills.

The number of fruit entries compared unfavourably with that of former years, and while the fruits grown under glass were fairly well furnished, the hardier kinds cultivated in the open reflected in a more or less degree the unseasonable weather. Grape exhibits were of a high standard of quality, and as the various classes were well filled, competition was keen. In the premier contest for eight bunches Mr. Donald McInnes, Glamis Castle, who was second at Southport, again occupied that position being eight points behind Mr. John Davidson, Ardencraig, Rothsay, whose strength specially lay in the bunches of Madresfield Court which brought up his total to 63½ points. Mr. Charles Traill, Castleleven, Gourock, was placed third, being only half-a-point under the second prize exhibit. Mr. McInnes found compensation in winning in four other classes, viz., for four bunches, for two bunches of Muscats, for one bunch of Muscats, and one bunch for bloom. Mr. David Airdrie, Dunlop House, excelled in the Black Hamburgh class, and the competition for a collection of fruit resulted as follows: First, Mr. Alex. McBean, Yester Gardens, Gifford; second Mr. D. Campbell, Copenock Gardens, Thornhill; third, Mr. A. T. Harrison, Culzean Gardens, Maybole.

There were 732 entries in the vegetable section and in most classes the quality was of a high standard. Potatos, Onions, Carrots and

Parsnips being noteworthy in that respect. Mr. John Gray, Uddingston, was successful in both collections, being 14½ and 7 points ahead of the runner up, and he also staged the best specimens of the Bishop and Arran Comrade Potatos, four heads of Celery, and four Cucumbers. Mr. Robert A. Grigor, Dalswinton Gardens, Dumfries, and Mr. William Nash, Mauchline, shared the honours in the remaining Potato classes, but the competitor with the greatest number of prizes to his credit was Mr. Joseph Devey, Stranraer, whose record included the small vegetable collection of eight varieties, two red Cabbages, six long Beet, four long Beet, four globe Beet, six long Carrots, four long Carrots, six stump-rooted Carrots, four Cos Lettuces and two Cos Lettuces.

Trade Exhibits.

Large Gold Medal—To Messrs. Sutton and Sons, Reading, for vegetables; and Messrs. Austin and McAslan, Glasgow, for cut flowers and vegetables.

Gold Medal—To Messrs. C. Engelmann and Co., Ltd., Saffron Walden, for Carnations; Messrs. Thyne and Son, Dundee, for Dahlias and herbaceous plants; Messrs. Allwood Bros., Haywards Heath, for Carnations; Messrs. M. Campbell and Co., Blantyre, and Messrs. L. R. Russell, Richmond, for Clematis; Messrs. Austin and McAslan, for Roses and alpines; Messrs. Kerr and Co., Glasgow, for cut flowers; Messrs. Williamson and Co., Glasgow, for Roses, alpines and herbaceous plants; Messrs. Dobbie and Co., Edinburgh, for Dahlias; Messrs. Storrie and Storrie, Glencarse, for fruit; Messrs. R. K. Gemmell and Co., Glasgow, for Roses and Sweet Peas; Messrs. Leighton, Glasgow, for cut flowers and alpines; and Messrs. Austin and McAslan, for Potatos.

Silver Medal—To Messrs. Blackmore and Langdon, Bath, for Begonias and Delphiniums; Messrs. Torrance and Hopkins, Busby, for Dahlias and Chrysanthemums; Messrs. Thos. Dagg and Son, Glasgow, for Gladioli; and Messrs. Bannatyne and Jackson, Hamilton, for Dahlias and herbaceous flowers.

Bronze Medal—To Mr. Peter Aitken, Bathgate, for alpines; Mr. Alex. Lister, Rothesay, for cut flowers; and Messrs. John Forbes, Hawick, for Phloxes and Dahlias.

Awards to Novelties.

First Class Certificates were awarded to a large seedling scarlet Carnation raised at Springburn Park, Glasgow, which may be described as an improved Red Laddie; to a seedling Chrysanthemum named Mrs. Quinton McFadyen, raised by Mr. Alex. McAlpine, Tollcross, an incurved bloom with the outside of the florets bronze and the reverse gold; to a seedling Chrysanthemum, Mrs. John Wilson, raised by Messrs. Torrance and Hopkins, Bushy. This is a new colour in Chrysanthemums, viz., lilac-rose on the outside of the florets and biscuit shade on the reverse.

An Award of Merit was given to the Corporation of Glasgow for Bomarea Whittonii, raised at the Botanic Gardens, and to Mary McAlpine, a new single white Chrysanthemum.

GUILDFORD AND DISTRICT GARDENERS'.

One of the most enjoyable outings of the season took place on Saturday, August 27, when a party of about seventy members visited the gardens of H. O. Serpell, Esq., J.P., (a former High Sheriff of Surrey), at Westcroft Park, Chobham.

Mr. Rolfe, the gardener, conducted the visitors through the well-stocked houses and gardens and pointed out many features of interest. Great improvements have taken place in recent years under Mr. Rolfe's initiative. This visit was made unique by the cordial reception Mr. Serpell accorded his visitors, and the generous hospitality he provided on their behalf. Messrs. Benham (senior and junior) of Chobham, Mr. A. E. Burgess, Horticultural Expert to the Surrey County Council, and others had been invited to meet the members.

Mr. Serpell, in an after-tea speech, said he considered it an honour to receive a visit from the Guildford Gardeners' Association. A few words were added by Mr. Burgess who congratulated the Association upon the work it is doing. Mr. W. T. Patrick, J.P., the President, thanked Mr. Serpell for the great kindness he had shown the members.

In a belfry in the Park tuneful chimes registered the flight of time, and when the company left the tea-table to saunter beneath the Oaks and Elms, Mr. Rolfe played a full peal on the carillon of eighteen bells. This was followed by a few Old English melodies.

READING AND DISTRICT GARDENERS.'

The first meeting of the autumn session was held in the Abbey Hall on Monday, September 19, when Mr. J. R. Lloyd presided over an excellent attendance. In the competitive and non-competitive sections many splendid exhibits were staged, and considering the climatic conditions that have prevailed of late, the flowers and fruits were of exceptionally fine quality.

In the competition for three vases of flowers (outdoor grown), three distinct kinds, the first prize was awarded to Mr. A. W. Gower, The Gardens, Calcot Grange; second, Mr. A. H. Fulker, The Gardens, Elmhurst, Reading; and third, Mr. H. Wade, The Gardens, Mortimer House. For one vase of Roses, not more than twelve stems or sprays, there were eight entries and the first prize was won by Mr. J. Wynn, The Gardens, Hammonds, Checkendon; the second by Mr. Rabbits, The Gardens, Bulmershe; and the third by Mr. A. W. Gower.

In the non-competitive section, a First Class Certificate was gained by Mr. R. Turner, Bath Road, Calcot, for extra fine fruits of Kondine Tomatos, whilst Awards of Merit went to Mr. T. C. Waite, Verona, Basingstoke Road, for nine dishes of Apples; to Mr. C. J. Howlett, The Yews, Earley, for seven dishes of Apples; and to Mr. A. E. Kirby, Amity Road, for Onions and Shallots.

The subject for the evening was "The Floral Garden," and the lecturer, Mr. A. Middleton, The Gardens, Compton Acres, Canford Cliffs, Bournemouth. By the aid of a splendid series of lantern slides, many of which were coloured, and basing his remarks on the gardens elaborated by him at Greenfield Hall, Laleham-on-Thames, Mr. Middleton gave a most interesting and enjoyable lecture. The sections included, lawns, Dutch, Old English, Japanese, rock and water gardens, and many practical hints were given as to their formation and planting. A hearty vote of thanks was accorded to Mr. Middleton for his lecture, and the hope expressed that he would pay a return visit in the near future. Eight new members were elected.

NATIONAL CHRYSANTHEMUM.

This Society's Floral Committee met in the Music Gallery, Holland Park Hall, on Monday, September 26, when nine novelties were considered. Mr. D. B. Crane was re-appointed Chairman of Committee.

First Class Certificates.

Glow. II. 1b.—A decorative variety of good form and substance, and one that should be useful for market. Good stem and foliage, colour bright chestnut, with a little gold edge to the tips of the florets. Very bright and attractive. Shown by Mr. H. Shoesmith, Junr.

Jack Robbins. II. 1b.—A fairly large flower for the section; flowers full and florets broad and gracefully recurved. Colour deep apricot with a bronzy tint. Shown by Mr. H. Shoesmith, Junr.

Pearla. II. 1b.—This is a large, spreading flower, measuring six or seven inches in diameter. Good stem and elegant form. Colour clear pearl-pink, or rich silvery-pink. A beautiful flower of lovely colour. Shown by Messrs. Cragg, Harrison and Cragg.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, September 16, the members of Committee present were: Messrs. J. B. Adamson (in the chair), A. Burns, A. Coningsby, J. Evans, Capt. W. Horridge, D. McLeod, W. J. Morgan and H. Arthur. Mr. J. Keeling was invited to sit with the Committee.

First Class Certificates.

Cattleya Mrs. Medo var. Goliath, a large flower of good shape, orange-yellow shading to pink, lip velvety-maroon; *C. Profusion var. Colossus*, a large flower with broad petals and a round, fringed lip. From Mr. John Evans.

Awards of Merit.

Cattleya amabilis var. alba marginata; C. Lady Veitch var. Snowdrift; Laelio-Cattleya Soulange var. Phoebus; and Cypripedium Rossettii var. Townley. From J. B. Adamson, Esq.

Award of Appreciation.

Laelio-Cattleya Carmencita var. Prince of Orange. From J. B. Adamson, Esq.

Cultural Certificates.

To Mr. A. Burns, for Oncidium incurvum album; and Mr. J. Howes, for Odontoglossum ardentissimum.

Groups.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded. Cattleya Hardyana vars. Flammea and alba; C. Viola, C. Vesta, C. Venus, C. amabile var. alba marginata, C. Lady Veitch var. Snowdrift, Laelio-Cattleya Hassallii alba, L.-C. Soulange var. Phoebus, L.-C. Carmencita var. Prince of Orange, L.-C. Urbania superbiens, and L.-C. Profusion, were all well shown, with several Cypripediums and Odontoglossums.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were awarded a Silver Medal for a group that included a fine batch of Odontoglossum grande, Cattleya Soulange, Oncidium incurvum album, and Cycnoches chlorochilon.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), staged Cattleya Marriottiana alba and Dendrobium Victoria-regina. Messrs. Keeling and Sons, Bradford, exhibited Cypripedium Lord Derby, C. Shogum, C. Beechense superbum and Pilumna fragrans.

Mr. J. Evans, Colwyn Bay, staged Cattleya Mrs. Medo var. Goliath; and C. Profusion var. Colossus; Mr. D. McLeod, Chorlton-cum-Hardy, showed Cypripedium Rossettii and C. Goliath.

ROYAL HORTICULTURAL.

The following awards have been made to the undermentioned subjects by the Royal Horticultural Society after trial at Wisley.

Awards to Dahlias.

Awards of Merit.

(Small-flowered Paeony).—*Elma D. Cook*, sent by Mr. A. J. Cobb; *Irma*, sent by Messrs. J. Burrell and Co.; and *Mrs. J. Goddard*, sent by Messrs. J. Cheal and Sons.

(Decorative).—*Josephine Adair, W. D. Cartwright, J. L. Crowther* and *Rev. M. Herbert Lee*, these four were sent by Messrs. J. Stredwick and Son; *Clown*, sent by Messrs. van der Kloot; *Freedom*, sent by Messrs. Kroon; *Mrs. D. Hepburn*, sent by Messrs. J. Cheal and Son; *Fred Ransome*, sent by Messrs. J. Stredwick and Son; Negro, sent by Messrs. Ballego.

(Cactus).—*Giant Kriemhilde*, sent by Messrs. Ballego.

Highly Commended.

(Single Bedding).—Thomas Moore, sent by Mr. J. B. Riding.

(Single Mignon.).—Coltness Yellow, sent by Mr. C. A. Johns; Powerscourt Yellow, sent by Messrs. W. Treseder and Co.; Northern Gem, sent by Messrs. Dickson and Robinson; Coltness Salmon, sent by Mr. Johns; Harold, sent by Messrs. J. Cheal and Sons; Kabouter, sent by Messrs. van Tubergen.

(Small-flowered Paeony).—Cora, sent by Mr. C. Turner; Ruth and Zillah, both these sent by Messrs. J. Burrell and Co.; Florrie, sent by Mr. W. J. Unwin; Aida, sent by Mr. C. Turner; Wanda, sent by Messrs. J. Burrell and Co.

(Decorative).—Rose Tendre, sent by Messrs. Hornsveld.

(Star).— Burford Star, sent by Messrs. J. Cheal and Sons.

(Cactus).—Pink Favourite and La France, both these sent by Messrs. Bruidegom.

Late Culinary Peas.

Highly Commended.

Glory of Devon, sent by Messrs. Cooper, Taber and Co.; The 1927, sent by Messrs. W. W. Johnson; Anticipation (Re-selected), sent by Messrs. J. Carter and Co.; Union Jack, sent by Messrs. Harrison and Sons, Mr. Speed and Messrs. C. C. Morse and Co.; and Chancelot, sent by Messrs. Dobbie and Co.

Commended.

Celebrity, sent by Messrs. W. W. Johnson; Dainty Stratagem, sent by Messrs. J. Carter and Co.; Reliable, sent by Messrs. Harrison and Sons; Wm. Richardson, sent by Messrs. Nutting and Sons; Masterpiece (Webbs), sent by Messrs. E. Webb and Sons; and Senator, sent by Mr. Speed and Messrs. Harrison and Sons.

Maize.

Award of Merit.

The Burpee, sent by Messrs. W. A. Burpee.

Highly Commended.

Extra Early Purity, sent by Messrs. Cooper, Taber and Co., and Mr. A. Dawkins; Pink and Extra Extra Early, sent by Mr. Evans Jackson.

Commended.

Golden Bantam, sent by Mr. Evans Jackson; and Banting Strain, sent by The Central Experimental Station, Ottawa.

Obituary.

E. A. Mocatta.—Horticulture has lost a good friend by the death of Mr. E. A. Mocatta, of Woburn Place, Addlestone, Surrey, who passed away early on October 1, in his seventy-second year. Mr. Mocatta loved his garden and encouraged those who have had charge of it. Plants, fruits and vegetables have been grown skilfully at Woburn Place by Mr. Thomas Stevenson, a former gardener, and Mr. W. Holden, who succeeded to the charge. On many occasions illustrations have appeared in these pages showing the fine cultivation that obtains at Addlestone, while our reports have shown the high position obtained by the Woburn Place Chrysanthemums at leading exhibitions.

ANSWERS TO CORRESPONDENTS.

Fig Trees; Horse Manure; and Roses.—*G. A. C.* (1) Fruit can only be effectually protected from birds by netting, and we suggest that even if your Fig trees are large, they might be netted with a rough skeleton wire frame erected over the trees to allow the net to hang clear. Mechanical scarers in the nature of small windmills with rattles attached are often very effective for a time, as also are pieces of glass or metal so hung that they will swing and rattle, but these devices become ineffective as the birds become accustomed to them, and some alteration in the movement must be devised. (2) Horse dung, when properly fermented, is an excellent manure of high fertilising qualities, suitable for both flowers and vegetables and particularly beneficial on cold, stiff soils. Its fertilising properties are highest when the litter has absorbed the urine and become well moistened so that a steady fermentation is fostered in the heap. The time it should be kept depends on this fermentation, and it may be necessary to turn and moisten the heap if the litter has a tendency to dryness. If the heap is well made and thoroughly moist so that the fermenting process is continuous it should be ready for use in from three to four months. A dressing of such manure as farmyard manure similarly treated would be good for Yew hedges if applied early in the year. (3) Roses cannot thrive in a very light and poor soil, and it would be advisable to remove entirely at least half its bulk and make up with heavy loam and half-rotten cow manure; add coarse bone-meal at the rate of 28 lbs. per load of material, and thoroughly incorporate the whole with the natural soil left. Such a mixture would make a good medium for Roses and there would be no necessity to add peat or sand. The surface manuring of herbaceous borders, Rose beds, etc., during the dormant season is not waste, the soil having the power to absorb and retain salts which may be carried down by rains, but cow manure is not suitable for this purpose owing to its retentive nature. By its use moisture is retained around the crowns of plants, and the surface soil is left wet and cold. For surface dressings, horse manure or vegetable manure is preferable. Cow manure may be used with advantage at this time of the year for incorporating with the soil when preparing for the autumn or winter planting of herbaceous plants, Roses, trees and shrubs.

Muscat Grapes.—*J. G.* The cause of the disparity in the size of your Muscat Grapes is due to imperfect fertilisation. This may be due to defective root action, dryness at the roots, unsuitable atmospheric conditions or the construction of the house, all of which exercise a great influence on the setting of the berries. Next season, when the Grapes are in bloom, tap the rods at midday or pollenate the flowers by means of a soft brush. Bunches which are well exposed to the light invariably set their berries better than those that are shaded, and this fact should be borne in mind when the shoots are being tied into position. The temperature of vineries in which Muscats are grown should never fall below 60°. These Grapes should not be thinned too soon. Good cultivation, well-drained borders and houses skilfully managed are very important factors in the setting and finishing of Muscat Grapes. Apply a dressing of slaked lime to the borders this autumn, and give two or three light dressings of sulphate of potash during the growing season next spring. If you take care not to overcrop the vines and follow our previous advice the Grapes should finish well next year.

Names of Fruits.—*S. H. W.* Mère de Ménage. *F. I.* Plum Autumn Compôte. *W. T. B.* The Plums were smashed when they reached us, therefore it was impossible to name the variety. *J. B.* 1, Reinette de Caux (syn. Dutch Mignonne); 2, Ribston Pippin. *Miss W.* Probably Sturmer Pippin. *W. B.* 1, Dean's Codlin; 2, Reinette de Caux (syn. Dutch Mignonne); 3, Sandringham; 4, Sam Young; 5, Gascoyne's Scarlet; 6, not recognised; 7, Minchull Crab. *W. T. C.* Crabs: 1, Dartmouth; 2, Montreal Beauty; 3, Transcendent; 4, Mrs. John Seden.

Removal of Fruit Trees.—*T. W. M.* You cannot remove any trees or shrubs from the garden when you move unless you are a nurseryman or market gardener, and the trees were planted in the way of your business. Unless this is the case, the general property in the trees is in the landlord, and they cannot be removed without his consent. If you are entitled to receive one month's notice to quit, then such notice must be given so as to expire on your rent day.

Sweet Peas and Book on Vegetables.—*R. W.* If you will send a stamped addressed envelope, we will answer your enquiries through the post.

Communications Received.—J. W.—A. E. L. (thanks for 1s. for R.G.O.F. Box.—H. P.—J. M. S. and S.—A. H. L.—F. C. P.—C. A.—A. P.—W. F. H. —C. and C.—N. F. B.—E. B.—A. T. J.—N. J. F. —T. P. McI.—H. W.—W. R.—C. R.—T. H. E.

NEW HORTICULTURAL INVENTIONS.

These particulars of New Patents, of interest to readers, have been selected from the Official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

Latest Patent Applications.

23,695.—Bell, I.—Means for securing Celery, etc., for earthing-up. September 7.

23,493.—Blenkin, G. T.—Agricultural machines. September 7.

23,506.—Clayton, C. Implement for cultivating fruit trees, etc. September 7.

23,267.—Edelhoff, A.—Potato-planting machine. September 10.

23,469.—Hutchinson, D. H. A.—Metal spacers for beehives. September 6.

Specifications Published.

276,835.—Tarr, J. M.—Box or crate for fruit and vegetables.

276,583.—Grimley, W.—Portable pumps or sprayers for horticultural or like purposes.

276,589.—Pearson, H. H.—Shearing implements for pruning purposes.

276,239.—Knowles, A. G.—Means and apparatus for binding Watercress, cut flowers, vegetables, herbs and like articles into bunches, sheaves or bundles.

276,256.—Harris, A. C. M., and Hemus, W.—Glasshouses, hot-houses, or the like for horticultural purposes.

Printed copies of the full published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

Abstract Published.

Lawn-mowers.—Patent No. 274,304.

The tendency of the grass box of a lawn-mower to jolt off when running over bumpy ground has been eliminated by a recent invention of the Derwent Foundry Co. (1920), Ltd., and J. E. V. Jobson, of Derwent Foundry, Exeter Place, Derby. The supporting hooks of the grass-box are prolonged downwards beyond the curved part that engages the supporting-bar, to form tabs or extensions which serve to prevent detachment of the box when it is displaced by jolting. The extension is so shaped as to tend to remain in contact with the bar as the box rises and falls. The neck of the hook is recessed at the bend to the same radius as the bar and is curved to a greater radius so that the box tends automatically to drop into proper position. The lower part of the box engages fixed stops on the machine.

THE LATEST TRADE MARKS.

This list of Trade Marks, of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

OZORITE.

479,423.—Chemical substances used for agricultural, horticultural, veterinary and sanitary purposes.—Ozone Chemical Company, Limited, Coal Pit Hill, Talke, Stoke-on-Trent, September 14.

OZOMI.

480,167.—A preparation for use as a germicide for spraying trees and the like.—Ozone Chemical Company, Limited, Coal Pit Hill, Talke, Stoke-on-Trent. September 14.

POTA.

481,419.—Vermin destroying preparations; and fungus destroying or preventing preparations for horticultural purposes.—I. H. Grabow and Co., 5, Jessensgade, Horsens, Denmark. September 14.

BLOSSOM TIME.

483,078.—Fruits and vegetables (for food).—Hugon and Company, Limited, High Bank Works, Ogden Lane, Openshaw, Manchester. September 14.

MARKETS.

COVENT GARDEN, Tuesday, October 4th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-12 0
—elegans	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	5 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray 12's, 15's	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink	18 0-21 0
—yellow	12 0-18 0
—bronze	15 0-18 0
—white	12 0-18 0

	s. d. s. d.
Crotons, doz.	30 0-45 0
Cyrtomiums	10 0-25 0
Erica gracilis, 48's, per doz.	27 0-30 0
— — 60's, doz.	12 0-15 0
— mixed, 72's, per doz.	8 0—9 0
—nivalis, 48's, per doz.	27 0-30 0
— — 60's, doz.	12 0-15 0
Nephrolepis in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris in variety	10 0-15 0
—large, 60's	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Solanums, 48's, per doz.	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz., bun.	8 0—9 0
—cuneatum, per doz. bun.	6 0—8 0
Arums (Richardia), per doz. blooms	6 0—7 0
Asparagus plumosus, per bun., long trails, 6's	2 0—2 6
med. sprays	1 6—2 6
short ,,	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med. ,,	1 0—1 6
short ,,	0 6—1 9
Asters, white, per doz. bun.	6 0—7 0
—coloured, per doz. bun.	5 0—6 0
—single, coloured, per doz. bun.	3 6—4 6
Carnations, per doz. blooms	2 6—4 6
Chrysanthemum Sanctity, per doz. blooms	3 0—4 0
—Mrs. J. Pearson, per doz. bun.	10 0-15 0
—white Duchess, per doz. blooms	4 0—6 0
—yellow, per doz. blooms	3 0—6 0
—bronze, per doz. blooms	2 6—6 0
—spray, pink, per doz. bun.	12 0-15 0
—spray yellow, per doz. bun.	12 0-15 0
—spray white, per doz. bun.	9 0-18 0
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz.	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	9 0-12 0
Gardenias, per doz. blooms	4 0—6 0
Gladiolus, giant varieties, per doz. spikes—	
—scarlet	1 6—2 0
—white	1 6—2 0
Heather, white, per doz. bun.	6 0—9 0

	s. d. s. d.
Lapagerias, per doz. blooms	3 6—4 0
Lilium auratum, per doz. blooms	4 0—5 0
—speciosum album, per bun.	3 6—4 6
—short, per doz.	3 6—4 0
—rubrum, long, per bun.	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per doz.	2 0—2 6
—short, doz. blooms	2 6—3 0
Lily-of-the-Valley, per doz. bun.	30 0-36 0
Marigolds, per doz. bun.	3 0—4 0
Michaelmas Daisy King George, per doz. bun.	9 0-10 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas	36 0-48 0
Physalis, per doz. bun.	18 0-24 0
Roses, per doz. blooms—	
—Columbia	3 0—4 0
—Richmond	1 6—3 0
—Madame Butterfly	2 0—4 0
—Golden Ophelia	2 0—3 6
—Mrs. Aaron Ward	1 0—1 6
—Roselandia	2 6—4 6
—Madame Abel Chatenay	2 0—3 0
—Liberty	1 6—3 0
—Molly Sharman Crawford	2 6—3 0
—Premier	— 3 0
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails	3 6—4 6
Stock, per doz. bun.—	
—double, white	9 0-12 0
— —mauve	9 0-12 0
Violets, per doz. bun.	3 0—5 0

REMARKS. Blooms of the best quality are in somewhat limited supply. Amongst Chrysanthemums there is a shortage of first grade disbudded blooms. All bunch stuff has been realising better prices, white and bronze Chrysanthemums being in greater demand than yellow and pink. Roses have been more plentiful than Carnations and their quality is exceptionally good. The latest arrivals in this department are a few bunches of English-grown Acacia (Mimosa) and a few boxes of St. Brigid Anemones. A few baskets of Solanum berries, Chillies and Carnations have been received from the south of France during the past week.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Aubergines, per doz.	2 0—3 0
Beets	4 0—6 0
Cabbage, per doz.	1 0—1 6
Carrots, per bag	4 0—5 0
Cucumbers, doz.	4 0—5 6
—Flats, 36's, 42's	12 0-16 0
French Endive, per doz.	2 6—3 0
—Batavia, per doz.	2 6—3 0
Guernsey Beans, per lb.	0 4—1 3
Leeks, per doz.	1 6—2 0
Lettuce, round, per doz.	0 9—1 6
—long, per score	1 0—2 0
Mint, per doz.	1 6—2 0
Marrows, per tally	5 0—6 0
Mushrooms—	
—cups	2 0—3 0
—broilers	1 0—1 6
—Field	0 9—1 3

	s. d. s. d.
Onions—	
Egyptian	11 0-12 0
—Dutch	8 6—9 6
—Spanish	14 0-16 0
Parsnips, cwt.	4 0—5 0
Peas, per bushel	8 0-13 0
Potatos—	
English	4 0—7 6
Radishes, per doz.	1 0—2 0
Sprouts, ½-bag	4 0—7 0
Tomatos, English—	
New crop	6 0—7 0
Old crop—	
—pink	4 0—5 0
—pink and white	4 0—5 0
—white	3 0—3 6
—blue	3 0—3 6
—Guernsey	3 0—3 6
—Jersey	1 0—3 0
—Dutch	2 6—3 0
—St. Malo	2 0—2 6
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Lord Derby	3 0—4 6
—Lane's Prince Albert	3 0—5 0
—Bramley's Seedling	4 0—6 0
—Other cookers	3 0—4 0
—Worcester Pearmain, ½ sieve	2 0—5 0
—Cox's, ½ sieve	4 0-10 0
—James Grieve	3 0—4 0
Apples, American—	
—Gravenstein, per case	10 0-14 0
—York Imperials, per barrel	25 0-40 0
—King David, per barrel	30 0-35 0
—Ganos	28 0-30 0
—Newtown Pippin	15 0-16 6
—American Cox's, per case	20 0-24 0
Bananas	14 0-20 0
Figs, French, per box	1 0—1 6
Grape Fruit—	
—Jamaica	— 30 0
—Porto Rico	— 35 0
Grapes, English	
—Alicante	1 3—2 3
—Colmar	1 6—3 6
—Black Hamburgh, per lb.	1 0—2 6
—Gros Maroc	1 0—2 0
—Muscat	2 6—5 0
—Canon Hall	2 6—5 0

	s. d. s. d.
Lemons, Messina Boxes	18 0-28 0
—Naples, per case	55 0-65 0
Melons, each—	
—English and Guernsey	1 6—5 0
Canteloupe	2 0—6 0
Oranges, per case—	
—Cape Navel	20 0-24 0
—Cape Valencia	14 0-17 0
Nectarines, doz.	10 0-24 0
Peaches, per doz.	6 0-24 0
Pears—	
—Fertility	3 0—5 0
—Pitmaston Duchess, ½ sieve	3 0—5 0
—Conference, ½ sieve	4 0—6 0
—Beurré Hardy, ½ sieve	6 0—8 0
Pears, Californian—	
—Beurré Hardy	27 0-30 0
—Bartlett	24 0-26 0
—Comice, ½ case	16 0-19 0
Pears, French—	
—Alexandrine, 48's, 64's	3 0—4 0
—Beurré Hardy, crates, 18's, 15's	4 0—4 6
Pines, case	15 0-32 0
Plums—	
—Switzer	3 0—5 0
—Pond's Seedling	10 0-15 0
—President	10 0-12 0
—Californian Prunes, per case	10 0-11 0
—Damsons	7 0-10 0

REMARKS.—There has been a slightly better tone operating in some sections of the market but, generally, trade has been, and still is, very slow. The very bad weather conditions have been largely responsible for the poor demand for practically every variety of fruit, a marked improvement in the trade being noticeable after even a few hours' sunshine. Hothouse Grapes are in ample supply and quotations are easier. For the few choice English Peaches available there is a demand sufficient to maintain comparatively high prices. English Apples are not quite so plentiful now that the bulk of the Worcester Pearmain crop has been marketed, but even so there has been little or no advance in the selling level as compared with recent figures. Large English cooking Apples are needed, although buyers are not prepared to pay high prices for them. Medium grade Apples of all kinds are a very slow trade. A few specially selected Cox's Orange Pippins are selling fairly well, but there are plenty of ordinary fruits of this variety which sell cheaply. Blackberries, both cultivated and wild, are selling well each day at good prices. Home-grown Pears are moderately plentiful and not selling too badly. This week has seen a considerable influx of Mushrooms, both cultivated and field, with the usual accompaniment of a set back in prices after a period of scarcity and very high prices. Tomatos sell fairly well, the few new crop fruits being popular. Old crop Tomatos are in competition with outdoor Jersey fruits, which are abundant and cheap. Hothouse Beans from Guernsey are a variable business; a few have done well, but others the reverse. The finish of outdoor Beans should be near at hand, therefore hothouse Beans will settle down to an improving price level. The Cucumber section is doing rather better than of late, prices being more stable. Asparagus from France is selling fairly well, and salads, Beans, Mushrooms, Aubergines, etc., from the same source are also popular. The general vegetable market is quiet. The Potato trade is better, with some increase in prices.

GLASGOW.

Supplies of first grade cut flowers were scarce during the past week, consequently buyers had to concede higher prices. Chrysanthemums dominated the market and values were higher all round, as follow:—Sanctity and Alcalde, 2s. 6d. to 3s. per dozen; No. 2 Bronze, 2s. 6d. to 3s. 6d.; Cranford Yellow, 2s. to 3s.; Phoenix, 2s. to 2s. 3d.; Pink Delight, 3s. to 4s.; Harvester, Phoebe and Betty Spark, 1s. 6d. for 6's; Debutante, 2s. to 2s. 6d.; No. 1 White, 1s. 4d. to 1s. 9d.; Rabbie Burns (sprays), 9d. to 1s. (6's); Phoenix and Betty Spark (sprays), 1s.; pink Roses were cheaper at 3s. to 3s. 6d. per dozen; red and white unchanged at 1s. to 2s.; Carnations steady at 2s. 6d. to 3s.; Lilium Harrissii and L. speciosum rubrum 1s. 6d. to 2s. per bunch; Lily-of-the-Valley, 3s. 6d.; Smilax, 1s. to 1s. 6d.; Calendula, 3d. to 4d.; and Asparagus, 9d. to 1s.

The feature of the fruit market was a sharp advance in prices for Apples owing to an acute shortage of American imports. York Imperials rose to 35s. and 40s. per barrel; Gravenstein, 15s. 6d. per case; home-grown Lord Derby, 18s. to 22s. per cwt. Victoria Plums, 7d. to 8d. per lb. selected, and 3d. to 4d. cooking quality; Switzer Plums averaged 4s. 6d. per chip, and Prune Damsons, 11s. to 12s. per sieve; Block's Beurré Hardy Pears 13s. 6d. per half-sieve; Hazel Pears, 12s. per bushel. Lemons were so high as 42s. for Malaga Murcias, and 50s. for Naples brands. Blackberries were dearer at 7d. per lb.; Sunkist Oranges, 27s. to 32s. per case; Grape Fruit, 40s. to 43s.; Californian Plums, 7s. 6d. to 9s.; and new season's Dates 6s. 9d. to 7s. per dozen cartons.

Tomatos rose to 8d. to 9½d. per lb.; Marrows, 4s. to 5s. per dozen; Mushrooms, cheaper at 2s. 6d. to 3s. per lb.; French Beans, 6d. to 8d.; Cauliflowers, 3s. to 6s. per dozen; Cucumbers, 3s. to 7s. and Lettuce 1s. 6d. to 2s.

TRADE NOTE.

PATENTS AND TRADE MARKS.—Any of our readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

CATALOGUES RECEIVED.

DANIELS BROS., Norwich.—Fruit Trees, Roses, etc.

T. SMITH, Daisy Hill Nursery, Newry.—Roses.

CLIBRANS, LTD., Altrincham.—Roses; fruit trees.

D. PRIOR AND SON, Colchester.—Roses, trees and shrubs.

G. BUNYARD AND CO., Maidstone, Kent.—Fruit trees.

J. CARTER AND CO., Raynes Park, S.W.20.—Sweet Peas; lawns and sports grounds.

SALE AND SON, LTD., Wokingham, Berks.—Roses, fruit trees, etc.

ALEX. DICKSON AND SONS, LTD., Hawlmark, Newtownards Co. Down, Ireland.—Roses.

PERRY'S HARDY PLANT FARM, Enfield, Middlesex.—New and rare bulbs and plants.

W. POWER AND CO., Waterford, Ireland.—Bulbs.

Foreign.

V. LEMOINE AND SON, 136, rue de Montet, Nancy, France—Nursery Stock.

M. HERB, Via Trivio, 24-36, Naples, Italy.—Novelties.

ETABLISSEMENTS VERSEPYU, Le Puy (Haute-Loire), France.—Seeds of trees.

JACQUES FULLEMANN, Gossau, St. Gall, Switzerland.—Seeds of Trees.

GARDENING APPOINTMENTS.

Mr. J. B. Lowe, for the past twenty years gardener to Major GEOFFREY LUBBOCK, at Croft House, Pangbourne-on-Thames, also at Greenhill, Sutton Verny, Warminster, Wiltshire, as gardener to Sir JOHN SMILEY, Bart., Great Oaks, Goring Heath, Oxon. (Thanks for 2/6 for R.G.O.F. Box.—EDS.).

Mr. J. Cross, for the past two years with SIR ALFRED GOODSON, Bart., Waddeton Court, Brixham, S. Devon, as gardener to E. PIKE, Esq., Pishiobury Park, Sawbridgeworth, Hertfordshire.

Mr. W. Sorrell, for the past seven-and-a-half years gardener to R. GERRISH, Esq., Milford Manor, Salisbury, as Orchid grower to LADY LEON, Bletchley Park, Bucks.

Mr. William Robertson, recently foreman at Bellahouston Park Nursery, as Superintendent of the Parks at Llandudno.

SCHEDULE RECEIVED.

CROYDON CHRYSANTHEMUM SOCIETY. — Thirty-fifth autumn show to be held on Wednesday, November 2, at the Central Baths Hall, Croydon.—Secretary, Mr. T. Aley, The Firs, 29, Highbarrow Road, Addiscombe.

THE
Gardeners' Chronicle

No. 2129.—*SATURDAY, OCTOBER* 15, 1927.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 48·8°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 12, 10 a.m. Bar. 30·5°. Temp. 45°. Weather, Dull.

The Nomenclature of Garden Plants.

It was a sapient Frenchman who remarked long ago that it is easier to learn botany than the names of plants. Things have not become easier since this epigram was made, and so far as garden plants are concerned it is often either altogether impossible or else a matter of prolonged research to discover what is the right name which should be ascribed to this or that plant. It might be supposed that the Vienna Rules of Nomenclature drawn up in 1905 would have banished all uncertainty, but although these rules have been of great assistance to the conscientious gardener they leave many questions of nomenclature unsolved. It is for these reasons, among others, that Dr. J. Valchenier Suringar has been moved to make an appeal on behalf of a subject to which he himself has made such valuable contributions—that of the Nomenclature of Garden Plants.[*] With so many problems of nomenclature still unsettled, it is useless to blame the nurseryman who adheres to a "good old garden name," for not ascribing the right one to a plant which he knows (or thinks) that he can sell under the one and not under the other. Should he call the Douglas Fir, Pseudotsuga Douglasii or must he re-christen it P. taxifolia? Should Pinus maritima become P. Pinaster and the European Larch be known as Larix decidua? Ought Populus balsamifera to be catalogued as P. tacamahaca and Betula alba be known as B. pendula; Wistaria sinensis converted to W. floribunda and Azalea mollis replace A. sinensis? What garden plants should become Mahonias, and which should remain Berberis? These are difficult problems, and it is no good exclaiming, as Lord Melbourne was wont to exclaim when an eager cabinet colleague raised a knotty political point: "Why can't you leave it alone?" For it is evident that, unless steps are taken to get things better, things nomenclatural will certainly grow worse. Every gardener who cares for accuracy must have experienced the difficulty of trying to worry out the right name for a plant, and none realise more the confusion which at present exists than those who are engaged in horticultural journalism. Dr. Suringar is not content with diagnosing the malady; he also indicates the way in which it may be alleviated. He points out that very useful pioneer work has already been done in Holland and in America. In the latter country a list of *Standardised Plant Names* has been published and is followed by a number of nurserymen. In Holland, with its 1,500 tree and shrub nurseries, valuable results have followed from the recommendations of the Dendrological Society of the Netherlands, formulated by their Committee of Nomenclature, of which Dr. Suringar is the President. Many Dutch nurserymen have adopted the recommendations of the Committee with results which help greatly to illuminate with the light of reason the darkness of chaotic custom. But what is clearly wanted is some authoritative international body which can make recommendations for general adoption and one, moreover, on which nurserymen as well as scientific horticulturists and botanists are represented. There is a golden opportunity for the institution of such a body. In 1930 there are to be held in London, two Congresses—an International Botanical Congress and also an Horticultural Congress. It should, therefore, be possible, if steps are taken betimes—as suggested at the recent Vienna Conference—to arrive at some agreed method for reforming and systematising the nomenclature of garden plants. If, however, nothing be done in the meantime, it is likely that little will be done at the Congresses. We would therefore suggest that the Royal Horticultural Society takes the initiative and seeks the co-operation of other national societies in a preliminary examination of the question, so that when 1930 comes the members of the Congresses may find much of the necessary spade work already done. Towards the doing of this work horticulturists, botanists and nurserymen should all contribute, for unless practical results are reflected in catalogues, any recommendations which are agreed upon will achieve little more than academic success. Those of the romantic school who exclaim with Juliet: "What's in a name? That which we call a Rose by any other name would smell as sweet," forget that with multiplicity of varieties the "other name" might well refer to another and altogether scentless Rose. The problems of nomenclature are many, and the time between now and 1930 is short. No better service could be done on behalf of gardeners and nurserymen than the introduction of order into the present chaos of nomenclature.

Royal Horticultural Society's Floral and Orchid Committees.—Having received no notice to the contrary, many members of the R.H.S. Floral and Orchid Committees attended the Fruit Show on October 11, only to find their services were not required. Omission to state that these Committees would not sit on the occasion of the Fruit Show was, no doubt, an oversight, but it caused unnecessary expense on the part of certain members—from Oxford, Cambridge, Reading and Tunbridge Wells, for instance—and no small inconvenience. Baron Schröder's Orchid-grower, Mr. Shill, brought up the beautiful new Brasso-Laelio-Cattleya Ballantineana, of glorious chrome-yellow, orange, amber, rose and ruby colouring, but "none was there to see"; and Sir John Ramsden sent from his garden at Bulstrode, Ribes sp. (K.W. 6028), with ruddy fruits, and the handsome scarlet Dahlia named Dazzler. Several Gladioli and Chrysanthemums were also brought up for the consideration of a Committee that did not meet.

New Park for Newport.—Lord Tredegar has given the town of Newport a lease of seventy acres of the Tredegar Deer Park at Bassaleg, at a nominal rent of £2 per annum; the lease is to be during the life of himself and his son. The gift has been gratefully accepted, and provision will be made for football and cricket grounds, tennis courts, hockey pitches and a bowling green, leaving about one-third of the area as pleasure grounds.

Douglas Fir Timber for Tilbury Dock.—The Port of London Authority has decided to use Douglas Fir timber in the new dock extension at Tilbury, on account of its superior durability, and it is estimated that 10,000,000 feet of timber will be required for this work.

Proposed Soil Bureau.—At one of the meetings of the Imperial Agricultural Research Conference, Mr. Ormsby-Gore suggested the formation of a Soil Bureau at Rothamsted, where not only could the soil problems of Great Britain be dealt with, but it might become the distributing centre of the knowledge collected by soil workers in every part of the British Empire. The constitution and functions of the Entomological Bureau at South Kensington and of the Mycological Bureau at Kew were described, and Kew was also regarded as an Imperial Bureau so far as Systematic Botany is concerned. The formation of a Bureau of Economic Botany and Plant Genetics was suggested by the Lovat Council.

Association of Economic Biologists.—The next meeting of this Association will be held at 2.30 p.m. on Friday, October 28, at the Imperial College (Botany Department, Prince Consort Road), South Kensington. Subject: "Agriculture in Tropical Africa." Lectures will be given on (1) "Planting Developments and Difficulties in Nyasaland," by Dr. E. J. Butler, C.I.E., F.R.S., Director of the Imperial Bureau of Mycology; and (2) "The Work of the Amani Institute," by Mr. W. Nowell, D.I.C., F.L.S., Director of the Amani Research Institute, Tanganyika Territory. Students of Biology are cordially invited.

Chadwick Public Lectures, 1927. — This autumn's programme of Chadwick Public Lectures is as wide in scope and as particular in interest as any yet put forward since the institution of the present lecture-scheme, more than fifteen years ago. Beginning with the second annual Malcolm-Morris Memorial Lecture on "Food Poisoning," by Dr. W. G. Savage, in the Hastings Hall of the British Medical Association, Tavistock Square, on Monday, October 17, at 5.15 p.m., the programme includes also an illustrated Travel Digest by Mr. W. Hales, Curator of the Chelsea Physic Garden, entitled "Tropical Vegetation and Some of its Uses to Man," at the Royal Sanitary Institute, on Thursday, October 27, at 5.30; two lectures on "The History of Housing," by Major Harry Barnes, F.R.I.B.A., in the Lecture Hall of The Royal Society of Arts, on the evenings of November 10 and 22, at 8.15 p.m., and a dissertation on "The Mind and Health," by Colonel Lelean, Professor of Public Health in the University of Edinburgh, early in December, at the Barnes Hall, Royal Society of Medicine. At the "Food Poisoning" lecture some curious specimens will be shown; Dr. Savage is not only Medical Officer of Health for Somerset, but he was associated with the late Sir Malcolm Morris in the production of his *English Public Health History*, and is therefore specially well-qualified to deliver a Malcolm-Morris Memorial Lecture. Lantern slides of many of the splendid photographs of tropical vegetation, brought back by Mr. Hales from his recent tour in the Far East in the interest of the Chelsea Physic Garden, will be shown for the first time on October 27 (at the Chelsea Physic Garden), and Mr. Hales will describe agricultural and horticultural conditions and vegetation as he has seen it in Ceylon, The Malay States, Penang, Singapore, Java and other isles, including crops of a kind quite unfamiliar to our own country, but which have nevertheless many uses for dwellers in the north. From "Tropical Vegetation" and all the beauty and glamour it denotes to the "History of Housing in England" is a far cry, yet there is a synthesis in all Chadwick Lectures since conditions which govern and aid development of health and efficiency in man are studied in them all. Major Harry Barnes may be relied upon for beauty of oratory and for glamour in his manner of presentment of even such a technical subject as the History of Housing which he is dividing into two parts, the first to include an account of the Royal Commission of 1842 and housing after, and the second dealing with the Royal Commission of 1885 and what has been done since. Colonel Lelean, who has bold but sane ideas on the subject he is to handle, will emphasize the importance of starting life with a healthy mind and show the sociological and financial consequences of breeding by the feeble-minded. The whole of this lecture will be illustrated and made plain by graphs and photographs. Sir William J. Collins (Chairman), Sir James Crichton Browne, Sir Frank Baines and Mr. W. E. Riley, all Chadwick Trustees, will preside at these lectures. Full particulars regarding the Chadwick Lectures may be obtained from the Secretary, Mrs. Aubrey Richardson, O.B.E., Offices of the Chadwick Trust, 204, Abbey House, Westminster.

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[*] "Nomenclature of Garden Plants. Chaos or Unity?" *Journal of the Royal Horticultural Society.* Vol. LII, Part 2. August, 1927.

Horticultural Organisers' Conference.—The Horticultural Organisers for the Midland province held a well-attended Conference at the Midland Agricultural and Dairy College, Sutton Bonington, recently, when Mr. T. Wallace, M.Sc., Deputy Director of the Research Station, Long Ashton, opened a discussion on "Recent Researches on the Manuring of Fruit Trees." Mr. Wallace gave a brief review of the results of investigations carried out in America, on the Continent and in the British Isles during the last thirty years, and stated that the results of these investigations served to emphasize the need for fundamental research at the present time. He then gave a comprehensive address, illustrated by lantern slides, in which he detailed the work in progress at Long Ashton, which was followed by a lengthy discussion. The following points were emphasized:—(1) Nitrogen in the form of nitrates or ammonia is the dominant factor in the manuring of fruit trees for growth and crop production; (2) Phosphates appear to have little effect on yield but improve the quality; (3) Potash is varied in its action; on some soils where leaf-scorch is prevalent, potash will cure this trouble; (4) Lime appears comparatively unimportant, even for stone fruits; (5) No general rules could be given for manuring to suit all cases. For example, soils low in calcium and high in potassium content, often caused chlorosis, but in one case chlorosis was being cured by grassing down the orchard.

Exhibition of Fungi in Brussels.—An exhibition of Mushrooms and other fungi, both edible and poisonous, was held at the Brussels Botanic Garden from September 24 to October 2. The exhibition contained a great number of different species, and special attention was called to the characteristics of certain poisonous toadstools, with a view to avoiding the mortality from this cause which frequently occurs in Belgium. Another feature comprised fungous diseases of garden plants, with suggested remedies; there was also a microscopic section, showing the texture of Mushrooms, their organs of reproduction, etc., and a collection of fungi from the Congo.

Women's Horticultural Work.—The Women's Farm and Garden Association will have its usual stand in the Gilbey Hall at the Dairy Show, to be held at the Agricultural Hall, on October 18 to 22. Advice will be given on all matters relating to agricultural and horticultural work for women. Employers can arrange to interview employees at the stand.

Mr. E. W. King.—One of the most widely-known men in the seed trade is Mr. E. W. King, sole director of Messrs. E. W. King and Co., of Coggeshall, whose portrait appears on this page. About thirty-five years have passed since Mr. King commenced business as a seed grower, with a small warehouse and a three-acre field. Now, he owns nine farms and leases other land and has a total of 1,500 acres under cultivation for the production of those seeds in which he specialises, and, in addition, he has large warehouses at Grange Hill, Coggeshall, and at Kelvedon Station. In the interests of his business, Mr. King has travelled far and visited the seed-growing centres of California and other parts of the United States, as well as the principal centres of the seed industry in Europe. Although well-known for its stock of Wallflowers, Shirley Poppies, Godetias, Larkspurs, Sweet Williams and Candytuft, and perhaps even better known for distributing such useful Sweet Peas as 2LO, Daventry, Gladys, Britannia, Giant Attraction, Doris, Leslie Rundle, The Sultan, and the novelties named Huntsman and Jack Hobbs, his firm does not confine its attention to flower seeds, but conducts a large business in agricultural seeds and garden vegetable seeds of all kinds. Culinary Peas are a speciality and great care is taken to secure true and improved stocks by means of the one-plant system. Mr. King has taken a great interest in the work of the National Sweet Pea Society for a long num- of years, and occupied the position of President of that body during four years of the trying war period.

MR. E. W. KING.

The Jones-Bateman Cup for Research Work among Fruits.—The Secretary of the Royal Horticultural Society desires us to remind those who intend to compete for the Jones-Bateman Cup, that accounts of their researches should reach him at the offices of the Society, Vincent Square, Westminster, S.W.1, by October 31. This cup, which was presented to the Royal Horticultural Society, in 1920, by Miss L. Jones-Bateman, is a valuable silver-gilt replica of the Warwick Vase. It is offered triennially for researches in the growing of hardy fruits, Figs, Grapes and Peaches, in the open and under glass. Any account of research submitted by a competitor must deal with work carried out by himself in Great Britain or Ireland, mainly during the last five years The cup will be held for three years by the successful competitor, who must give a bond for its safe return. A successful competitor is eligible to compete on the next or any subsequent occasion when the cup is offered for award. When the cup is relinquished the holder will receive a Hogg Medal specially struck in gold. The accounts of the competitors' work will be submitted to three assessors (two appointed by the Royal Horticultural Society and one by the National Farmers' Union), who will report to the Council of the Society upon the originality and comparative potential value to the fruit-growing industry of the work of the competitors.

British Gladiolus Society's Show, 1928.—This Society's exhibition for 1928 will be held at the Royal Horticultural Society's Hall, Westminster, S.W.1, on Friday, August 10.

Sempervivums.—At the meeting of the Royal Horticultural Society, on Tuesday, October 18, Dr. R. Lloyd Praeger will read a paper at 3 p.m. on "Hunting Sempervivums." Dr. Praeger has been specialising in Sempervivums for many years and is preparing a monograph on the subject, similar to the one he prepared on Sedums. Dr. Hill, Director of the Royal Botanic Gardens, Kew, has kindly offered to lend plants for demonstration at this lecture, and will take the chair.

Scottish Potato Trials.—On the invitation of the Board of Agriculture (Scotland), a representative company of raisers, growers and merchants visited Philpstoun, Linlithgowshire, on Thursday, October 6, when a demonstration was given of the seedling Potatos under trial. Mr. Mann welcomed the visitors on behalf of the Board, and after Mr. Anderson had explained the objects of the tests in which 4,500 seedlings had been handled in the laboratory at East Craigs last year, Mr. Millar conducted the company over plots where specimen roots of the varieties were on view As an indication of the table qualities of the outstanding sorts, dishes of cooked Potatos were submitted for inspection. Out of fifty seedlings in the first year's trials only two were regarded as promising. D.1. raised by Mr. W. B. Pollock, Bishopton, is a first early variety which yielded a heavier crop than Epicure when both were lifted in an immature state in July, and while the tubers of the former were free from blight, those of the latter sort, grown in an adjacent plot, were nearly all affected by disease. N.19, raised by Mr. T. C. Spence, Dunbar, had only one tuber out of sixteen roots affected with blight, and the best root yielded 7 lbs. 2 ozs. of which 6 lbs. 10 ozs. were ware; this is a late variety with a vigorous haulm, quite distinct from King Edward. In the quest for a first-early immune variety that will crop as early and as heavily as Epicure three seedlings held out prospects of success. The best of the trio is No. 520, raised by Mr. Donald McKelvie, Arran. The tubers, which resemble those of Epicure, are few in number but quickly develop to a good size. Plots of the varieties were on view, and Mr. Millar read the following cropping results of trials in different parts of the country:—Cork: No. 520, 19 lbs.; Epicure, 16 lbs. East Craigs: No. 520, 35 lbs.; Epicure, 25 lbs. Lamlash: No. 520, 22½ lbs., Epicure, 13½ lbs. These and other local results represented a remarkable series of successes for No. 520 over Epicure. In another category, Messrs. McGill and Smith's Herald seems likely to be an efficient substitute for Sharpe's Express, Eclipse and Witch Hill. The tubers are of a particularly attractive, thick-oblong shape, with shallow eyes; the foliage has been free from virus disease during the three years' trials, and the cooking quality was described as excellent. Comparative weights were as follow:—East Craigs: Herald, 17 lbs. 15 ozs.; Sharpe's Express, 9½ lbs.; Eclipse, 13 lbs.; Boghall: Herald, 54 lbs.; Express, 32 lbs.; Eclipse, 65 lbs.; Starmont (Northern Ireland): Herald, 13 tons to the acre; Express, 9 tons 14 cwt.; Strabane: Herald, 10 tons; Express, 11 tons. Chief interest centred in the maincrop seedlings Arran Banner and Doon Star, which have been under observation for three years. The former was described as the best Potato ever grown in the trial grounds, and no other Potato has maintained such a consistent record for weight of crop, having beaten Arran Chief, Great Scot, and other competitors. The tubers of this maincrop variety were sound, when dry, and practically free from blight—a remarkable achievement in view of the fact that water was sometimes inches deep between the drills. The heaviest root weighed in the presence of the company gave a yield of practically 10 lbs, which compares with 14 lbs. in 1926. Doon Star (McGill and Smith) is a possible competitor with Majestic, and has the advantage over that variety of a stronger haulm and much better cooking quality. The tubers are particularly outstanding by reason of their attractive appearance, while the plant is free from virus diseases. Another promising maincrop seedling was Glencoe, raised by Mr. A. McAllister, Dumfries. Mr. Millar announced at the close of the demonstration that the candidates for registration this year were Herald, McKelvie's 408, Doon Star and Arran Banner, and that the results would be announced later in the year.

German Employees' Long Service.—On October 1 the well-known Berlin nursery firm of L. Späth celebrated the fiftieth year of service with the firm of one of its employees, Gustav Guttzeit, who occupies the position of garden inspector. Dr. Späth was present in person, and read a diploma which had been received from the President of the Republic, afterwards congratulating Herr Guttzeit on his long and valuable services to the firm. Many friends and fellow-employees were present and offered their congratulations, and about fifty workers in the firm who had been over twenty-five years in the business also received felicitations.

National Chrysanthemum Society's Show, 1928.—Arrangements have been made to hold the National Chrysanthemum Society's show of 1928 at the Royal Horticultural Society's Hall, on November 1 and 2.

Horticulture in Roumania.—The Roumanian Horticultural Society continues to grow in importance and activity, and has lately received an acquisition of members by reason of the dissolution of a society formerly known as the Timisoara Horticultural Society, which will be now simply a local branch of the parent society. The journal previously published by the smaller society will be discontinued, and the *Revista Horticola* will be reorganised to cope with the increased number of its readers. An important horticultural exhibition is to be held from November 6 to 9, in the Carol Park, Bucarest, under the high patronage of Queen Marie. Unfortunately, the horticultural school which was founded largely owing to the activities of the Society, has not prospered well, pursued, as it has been, by misfortune, including the death—largely from overwork—of the two most active protagonists. Efforts are now being made to utilise the buildings and grounds for a private horticultural school, and the Ministry of Agriculture has been approached for permission; in this way the school may yet serve a useful purpose. The Society has lately been instrumental in inducing the Roumanian Tobacco Régie to sell nicotine in liquid and powder form for horticultural purposes at a reasonable price and with a guarantee of quality. This nicotine, which will shortly be on sale, will be warmly welcomed by growers, as the nicotine on the commercial market is neither reliable nor cheap.

Appointments for the Ensuing Week.—Monday, October 17: National Chrysanthemum Society's Floral and Executive Committees meet. Tuesday, October 18: Royal Horticultural Society's Committees meet (two days, Orchid show). Wednesday, October 19: Royal Gardeners' Orphan Fund meeting; London Gardens Guild lecture. Thursday, October 20: Ipswich Gardeners' Association's meeting; Wallington Horticultural Society's lecture. Friday, October 21: Association of Economic Biologists meet; Manchester and North of England Orchid Society's meeting. Saturday, October 22: British Mycological Society's Foray with British Ecological Society at Great Missenden.

"Gardeners' Chronicle" Seventy-five Years Ago.—*A Royal Botanist.*—There is one king in Europe who is a good practical botanist, and who must look back upon the hours spent in the arrangement of his fine herbarium with far more pleasure than upon those wasted in a vain and retrograde course of politics. The monarch in question is His Majesty of Saxony, who, in his scientific career at least, has gained honour and respect. Many are the stories told by his subjects of their ruler's adventures when following his favourite and harmless hobby; how, more than once, astray from his yawning courtiers, he had wandered in search of some vegetable rarity across the frontier of his legitimate dominions and, on attempting to return, was locked up by his own guards as a spy or a smuggler, since he could produce no passport nor give any more proper account of himself than the preposterous assertion that he was their king. Fifteen years ago he made a famous excursion to the stony and piratical little Republic of Montenegro. It was literally a voyage of botanical discovery, and the potentate sailed down the Adriatic in a steamer fitted out with all the appliances of scientific investigation. On its deck he might be seen busily engaged in laying out his plants, ably and zealously assisted by his equerries and aides-de-camp, and guided by the advice of eminent botanists, who accompanied him as members of his suite. Such a kingly progress had surely never been seen before, unless Alexander the Great may have relieved the monotony of conquering by making occasional natural history excursions with his *quondam* tutor Aristotle. The Montenegrins, on ordinary occasions, very troublesome and by no means trustworthy people—folks who still keep many of the worst habits of the old Scottish Highlanders—were mystified into tranquility by the peculiar proceedings of their royal visitor and his noble attendants. Resolved, however, to render due honour to so distinguished and unusual a guest, they furnished a guard of state to accompany him in all his peregrinations; and, whenever his botanical Majesty stooped to gather a new or rare specimen, the soldiers halted and, with much ceremony, presented arms. *Gard. Chron., October* 16, 1852.

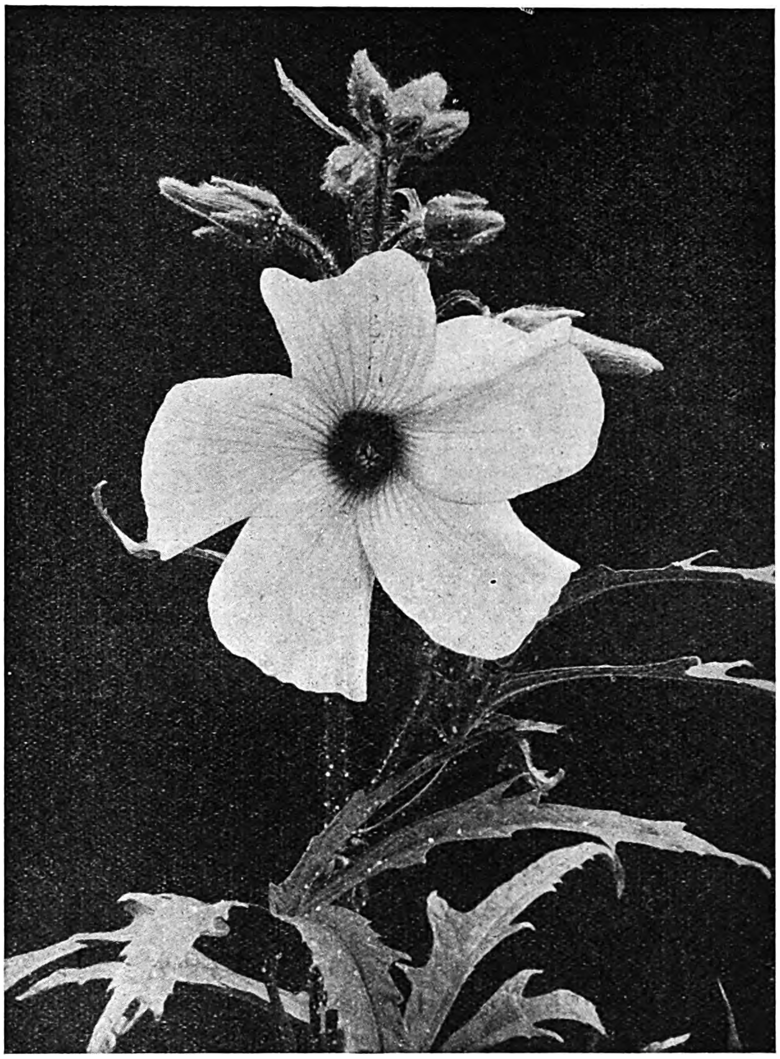

FIG. 134.—HIBISCUS DIVERSIFOLIUS.
(see p. 306).

Publications Received.—*Official Guide to the Museums of Economic Botany*; No. 3, Timber and Gymnosperms; Royal Botanic Gardens, Kew; price 1/- net.—*The Journal of the South Eastern Agricultural College, Wye, Kent*; No. 24 1927; obtainable from the College, price 7/6 post free; residents in Kent and Surrey, 3/6 post free.—*Garden-craft in the Bible and other Essays*, by Eleanour Sinclair Rohde; illustrated; Herbert Jenkins, Ltd., 3, York Street, St. James's, S.W.; price 10/6.—*Flowers in the Home*, by Menie Watt; illustrated; A. and C. Black, Ltd., 4, 5 and 6, Soho Square, W.1; price 2/6 net.—*Income Tax Simplified*, by Arthur Fieldhouse and E. E. Fieldhouse; ninth edition, 1927-8. Simpkin, Marshall and Co., London, E.C.4; price 1/6 net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

General Remarks.—The sunless weather which, alas, still continues, has not been to the advantage of sun-loving plants. In all districts plants have suffered from the continual wet, cold, sunless season, and in most cases the growth made in the warmer divisions is of a soft and sappy nature, but, fortunately, in the cooler divisions the greater portion of the plants appear to have revelled in the sunless conditions. With shortening days and the decreasing influence of the sun, shading may now be dispensed with altogether. It is impossible to give precise directions as the amount of shading required in the autumn, as much depends on the locality, the aspect of the house, the arrangement of the plants, and the genera to which the plants belong. At the present time, however, the foliage of all Orchids should be sufficiently matured to need no protection from the sun, and the plants may be exposed to full light with safety. The aim of the cultivator should be to make the most of all the light available at this season so as to thoroughly consolidate the growths of all Orchids, thus enabling the plants to pass safely through the winter months.

Watering.—Supplying water to the roots requires much more judgment now than when the plants were in active growth; Orchids cannot be treated collectively in this respect, and the right application or withholding of water is the basis of all successful cultivation. The habits of the various kinds, the state of growth, and the condition of each plant must be considered separately, and the treatment varied according to their separate requirements. Many of the larger, distichous-leaved Orchids are still growing freely and require plenty of moisture until the roots show, by the white film closing over the points, that their season of growth is past. After this, less water will be needed until, in winter, only sufficient should be given to keep both roots and foliage in a plump, healthy condition. In the case of pseudobulbous Orchids that are now fast completing their season's growth, it is a mistake to make drastic changes by withholding or lessening the water supply too suddenly, as the roots of many kinds are most active at this state of their development. There should be less damping down than hitherto, as the humid atmosphere outside promotes good atmospheric conditions within the house, when assisted slightly in the cases of houses that are inclined to dry quickly. The longer nights and cooler atmosphere may necessitate the use of more fire-heat in the cooler divisions, it being better to have some warmth in the pipes, with the ventilators open a little, than to close the house without heat, as a saturated atmosphere, accompanied by a low temperature is injurious to all Orchids.

Temperatures.—During the present month it is advisable in every department to err a trifle on the warm side with the night temperatures, as one sudden fall of several degrees—especially if the plants have been recently watered and the atmosphere has become unduly moist—might do more harm to many tender plants than all the cold weather of winter. No harm will accrue, even in the cool house, should the temperature through the night be a few degrees above the normal, provided the ventilators are opened on all suitable occasions. It is advisable to see that none of the plants are too near the roof-glass as that is a frequent cause of their being chilled, and it is also advisable to gradually reduce the temperature and the moisture so that by the end of the present month we reach the winter level in both.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Broad Beans.—In gardens having a warm aspect, and where the soil is not too heavy, and at the same time is well-drained, a plot should be manured and deeply dug or trenched in readiness for sowing a few rows of Broad Beans towards the end of the present month, or early in November. Choose early varieties, such as Early Prolific and Early Longpod, not forgetting Early Mazagan, which is very suitable for this purpose, being very dwarf and hardy. The seeds should be placed more closely together than when sowing in the spring so as to allow for losses which may occur during the winter. A careful watch must be kept for slugs, and so soon as the plants are about two inches high, a little soil should be drawn up to the stems so as to afford a little shelter should the weather prove very severe during the winter; a few boughs or some light form of protection will also prove beneficial.

Peas.—On warm, early borders which are vacant, the soil should now be manured and deeply dug in readiness for sowing Peas during November and onwards. Only the round-seeded varieties are suitable for sowing at this season. The seeds are best sown in rather narrow drills so that when the soil is drawn up to the sides of the rows it will effectively afford protection. When the young plants are about two or three inches high, place small twigs closely together alongside the rows; these will afford support and some protection against cold winds. Should the weather prove very severe, a temporary shelter of evergreen boughs or Bracken will do much to keep the plants snug. One of the best varieties of Peas for sowing at this season is Selected Pilot. The seeds should be well coated with red lead before sowing and sown more thickly than at ordinary times. Where sparrows are troublesome protection must be afforded either by lines of black cotton or some small-meshed netting, as the young growths are very tempting to birds.

Tomatos.—The past season has been a particularly bad one for ripening these fruits out-of-doors. Any small, green fruits remaining should be gathered and used for making chutney or pickles. Where large fruits still remain the whole stem should be cut off at the base and hung up intact in a warm house to ripen them, for although these may not be good enough for use in the raw state they will be found valuable for cooking. Tomatos which are being grown inside for winter fruiting will need very careful attention from now onwards. Special care must be exercised with the watering can so that the roots do not get too wet, or trouble will quickly follow. Maintain a dry, moderately warm, buoyant atmosphere at all times and remember to pollenate the open flowers daily, either with a camel-hair brush or by sharply tapping the supports.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Vines and Vineries.—From now onwards the pruning of vines and the cleansing of vines and vineries will provide continuous work until all, with the exception of late houses, are ready for starting again. Many people use strong insecticides and other mixtures where red spider, mealy bug and other pests are known to be present, and often do more harm than good. Soft soap, sulphur and water and Gishurst Compound, when properly used, are still hard to beat. Repeated washings of infested vines should be most carefully performed, and all cracks and holes in old spurs stopped with pure Gishurst Compound. The cleaning of the vines themselves is not the most difficult part of the business as mealy bug gets into the roof, trellises, walls and the loose surface soil of the borders, where dislodgment is extremely difficult. However, if the cleansing is thorough, and a small brush dipped in methylated spirits is used daily from the time the vines break, success is assured. Successional vineries containing the remains of crops should now be cleared, to economise fuel and to give the vines a thorough rest before they are pruned.

Muscat Grapes.—All Muscat Grapes are now quite ripe and well coloured; they should not receive over much fire-heat, neither should they be allowed to suffer from damp, which they are liable to during the fall of the leaf. A gentle warmth in the pipes, accompanied by a moderate circulation of air on fine days will keep the Grapes fresh and plump. A temperature ranging from 50° at night, with a slight rise during the day should be high enough, but much depends upon the house and its surroundings; a low, damp situation on wet soils does not allow the admission of fresh, dry air, but by careful attention to details and keeping the ground ventilators closed during the prevalence of wet or foggy weather, there should be no difficulty in keeping the Grapes fresh; of two evils it is better to let them shrivel a little rather than rot.

Late Houses.—In houses where Lady Downes and other thick-skinned Grapes are not well finished, the hot-water-pipes should be kept sufficiently warm to maintain a steady circulation of fresh air, care being taken that sudden falls of temperature do not produce a chill. Houses in which the vines were started early enough and the Grapes are now finished should, like the Muscat house, be kept dry and at a moderate temperature; an excess of fire-heat is liable to cause loss of colour. Any later laterals should be pinched, as the languid growth keeps the roots in action and retards the ripening of the premier leaves.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Begonias.—Autumn- and winter-flowering Begonias are now growing freely, and the main shoots of the Mrs. Heal type, Optima, Exquisite and many others, will require staking to prevent them from bending down with the weight of their flowers. These Begonias will provide a display over a long season by allowing the earliest batch to develop all flowers after this date, while the later plants may have the buds removed once more before allowing them to bloom. Encourage these later plants to make healthy growth and form a succession. Unfortunately, these Begonias dislike fogs and when they occur the top ventilators should be kept closed and the atmosphere dry.

Begonia Gloire de Lorraine.—Plants of this Begonia should be kept growing in an intermediate temperature and with less shade than hitherto; stand them near the roof glass to prevent a tendency to a straggling habit of growth. Some of the plants may be allowed to develop their flowers, while others should have their flowers removed to enable them to provide a succession to those that flower from now onwards; apply water to the roots with extra care and use stimulants more liberally than hitherto, as well-rooted examples will need a light stimulant occasionally. Allow the plants sufficient space so that each may form a good specimen; where overcrowding is allowed the plants will not be well clothed with flowers all round. An average night temperature of 55° should be maintained in the house in which they are growing.

Francoa ramosa.—Specimens of the Bridal Wreath will have passed out of flower and will need to be divided and repotted. If this work is done now the plants will have time to form roots in the new compost before the shortest days arrive. Francoa ramosa requires cool treatment at all times, and if the plants are stood in a cool house or frame whence frost is excluded, the conditions will suit them admirably. After potting, they should be kept close for a short time, when, with a little care taken in regard to watering, they will soon recover. The compost used should be on the light side and contain plenty of sand.

Watering.—The business of affording water to plants growing in glasshouses will require a little more care and consideration as the winter advances, as with the lowering of all temperatures in plant houses during the winter it is only natural that a corresponding reduction of atmospheric moisture must be made. During periods of dull, cold weather, the houses should be kept comparatively dry, and the roots of plants be kept slightly on the dry side, but not to such an extent as to cause flagging. When admitting air see that cold draughts are not created, but air must be admitted freely on all favourable occasions, as it is only under these conditions that the atmosphere can be kept sufficiently dry.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford,
Wrotham Park, Barnet, Middlesex.

Transplanting Young Trees.—Young trees which have been grown and prepared for a few years in the reserve garden may be carefully lifted and replanted at any time after this date, but the sooner the work is done the better it will be for the trees. First thoroughly prepare the stations for the reception of the roots before attempting to lift the trees. The drainage should be the next important item; if the soil is of very heavy texture, a considerable depth of rough material should be used beneath the site; a much less quantity will suffice on better drained soils. The holes for the reception of the roots should be much larger than the root-spread so that there may be no cramping and crowding at planting time. Lift the trees carefully, preserving as many roots as possible. In some cases the trees may be lifted with a goodly portion of soil adhering thereto, placed on mats and carried to the site where they are to be permanently planted. Make sure any damaged ends are cleanly cut, spread the roots out and bury them at suitable depths in the newly prepared soil. Sweet, fertile loam, with old mortar rubble, wood-ash and a little manure added will answer most purposes, with additional lime for all stone fruits.

Lifting Unfruitful Trees.—Trees that have been in position a few years and are making growth that is too strong to be fruitful, should be lifted entirely and replanted afresh; open out a trench around them, two feet deep and at a distance corresponding to the spread of their branches; undermine all the roots as the work proceeds; trim any damaged tips and relay them at equal distances and nearer to the surface than before, placing a little fresh, fine soil amongst them.

American Blight.—Fruit trees that are badly infested with this pest should (after the fruits have been gathered), be thoroughly washed with a good insecticide so as to destroy so many of the insects as possible before the leaves fall. A good cleansing at this season will prove helpful, especially in cases of bad infestation.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic
Gardens, Kew.

Herbaceous Borders.—Flower borders should be kept tidy by removing summer-flowering subjects that are over or have been destroyed by frost; at the same time, it is a mistake to indulge in a too drastic cleaning up, for the stems of many herbaceous plants prove attractive for a long time and help to give a furnished appearance to the border. Where it is necessary to replant the herbaceous collection the work should be done towards the end of October or in the beginning of November, as it is a great advantage to get replanting done early, while the soil is still warm. Early planting enables the plants to become established quickly and they are then in a better condition to withstand spells of dry weather the following season. When replanting herbaceous collections it must be borne in mind that some plants, such as Paeonies and Anemone japonica and its varieties, resent frequent disturbance; such plants should therefore only be transplanted when this is really necessary. Anemone japonica and its varieties may be increased by means of the underground root stocks, which may be cut into small pieces and placed in boxes of sandy soil, or in beds out-of-doors. Some plants, such as Delphiniums and the many varieties of Chrysanthemum (Pyrethrum) roseum are best moved during the spring, when they are commencing to make fresh growth. When dividing herbaceous plants the strong outside portions of the clumps should be selected for replanting; in the case of strong-growing subjects like Heleniums and Asters, portions with only three or four shoots are quite large enough to use as they will not need to be thinned the following spring—a few strong stems will give better results than a mass of weak, overcrowded shoots. Needless to say, when replanting herbaceous borders the ground should be thoroughly trenched and manured.

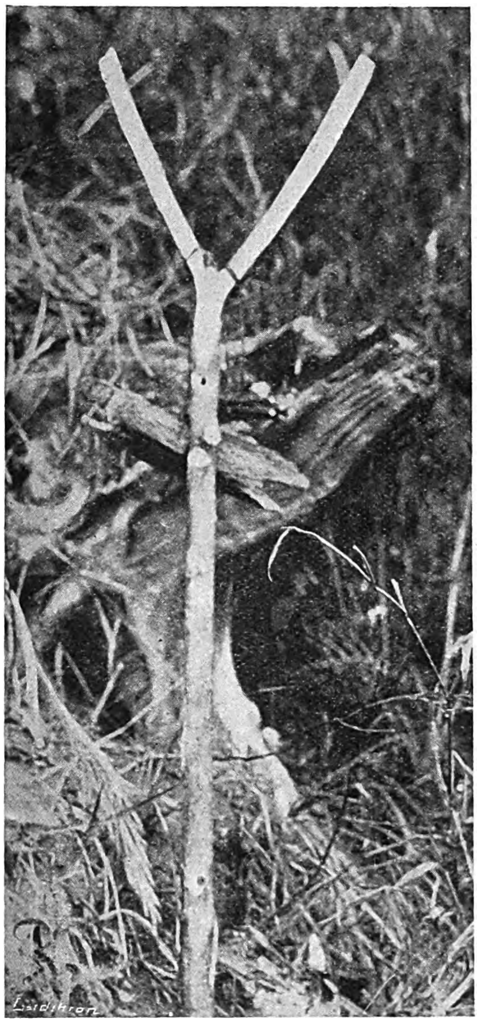

FIG. 135.—A LISU "TABOO" ON HIS SPECIAL PIECE OF FIREWOOD.
(see p. 310).

Cannas.—The Cannas that have been used for summer bedding should—as they are lifted—have their stems partly cut back before they are stored for the winter; they may be safely wintered in sheds, or under the staging in a cold greenhouse, or they may be laid in ashes or leaves at the foot of a warm wall. They should, however, never be stored dry for any length of time as under such conditions they usually prove difficult to start during the spring, whereas when kept moderately moist they turn out fresh and plump and start into growth very readily.

Specimen Plants.—Large plants in big pots and tubs, including such popular subjects as Agaves, Agapanthus and Hydrangeas, that have been used during the summer months for furnishing vases and terraces, should now be placed under cover, preferably in a cold greenhouse, although in many cases they may be stored safely in dry, frost-proof sheds.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of
Ailsa, Culzean Castle, Maybole, Ayrshire.

Raspberries and Loganberries.—The old canes that have carried the current season's crop of fruits should be cut down close to the ground level and a selection made of the young canes to be tied into position. Various methods are employed throughout the country in tying up both Raspberries and Loganberries, and the main idea underlying most of these methods is to allow the fruiting canes room to develop the side-shoots on which the fruits are borne, while at the same time providing space for the young canes which are to carry the following season's crop. To secure this end, one of the best methods is a V-shaped trellis to which the fruiting canes are secured, and the young growths naturally fill up the centre space as they grow, to be in turn tied outwards when the old ones are removed. Where the Raspberry Borer has been troublesome, the removal of the old canes at the earliest possible moment, and the destruction of them by burning, forms one of the best preventives of future attacks, as the larvae is thus destroyed before it has secured a footing in the young canes. The roots of these fruits should never be disturbed by deep digging; it is sufficient to apply a mulch of manure, leaf-soil, or old compost, and prick this lightly in with a digging fork.

Storing Crops.—Lifting and storing of root crops should now be attended to, and Beet and Carrots for winter supplies carefully placed in layers, with plenty of sand between. The latter are sometimes difficult to keep if placed in very large clamps, and should therefore be stored in long, narrow ones. Large Onions are often amongst the most difficult crops to ripen and keep sound, and they should be tied in twos or threes, according to size, and slung over poles, preferably under the cover of an open-fronted shed, where a constant circulation of air is always passing among them, and where they may be readily examined from time to time; avoid rough handling, which would bruise them, and by setting up decay in the outer layers, prevent the Onions from keeping in good condition. When thoroughly ripened in this way, the tops will soon dry and the bulbs may then be stored by laying them out in any well-aired shed, where they should remain fit for use for a considerable time.

Digging and Trenching.—So soon as the ground is cleared of crops, a rough plan of next year's cropping should be made, and the different areas prepared, adding or withholding manure, as required. Thus ground that has been well-manured the previous season for such crops as Peas, Cauliflowers, etc., may with advantage be trenched or double-dug without adding fresh manure, in preparation for such crops as Potatos, Beet, Parsnips, etc., while the sites occupied by these root crops in the current season may be well manured and prepared for the more exacting crops. In all cases, where time permits, it is advisable to turn the soil over at least two spits deep, and break up the sub-soil, as by doing so a deeper root-run is provided, and even in a wet season ground that has been thus deeply moved does not readily become water-logged and sour. Another advantage is that annual weeds are buried deeply.

Cauliflowers and Lettuces.—Plants raised from the sowings made in August are now ready to be transferred to boxes or frames for protection during the winter; these should be planted firmly in rather poor soil, especially Cauliflowers, and plenty of air admitted at all times, except during hard frost, in order to keep the plants short and sturdy. When sufficient have been thus secured, the remainder should be thinned out and left standing in the seed-bed, dusting the gound occasionally with lime where slugs are troublesome; in many cases these plants will survive the winter, and prove useful for additional supplies in spring time,

ORCHID NOTES AND GLEANINGS.

EPIPHRONITIS VEITCHII.

This useful, pretty, and bright scarlet, bigeneric hybrid between Sophronitis grandiflora and Epidendrum radicans is not one of the best growers with many, whilst with others it makes a fine specimen and produces large heads of beautiful flowers. When seen in the best condition, it is a most delightful plant and worthy of all care and attention. The chief difficulty is to find a position that exactly suits its requirements; it succeeds in a somewhat humid position in the cool, intermediate house, where it may be syringed or sprayed frequently to prevent attacks of thrips.

Constant propagation is the only means of maintaining a healthy stock of this and other rare and difficult Orchids, as young plants are more vigorous than older ones. E. Veitchii is constantly producing shoots from the old stems, and by the continued making up of young plants from this source, and the division of the older plants, a good stock may easily be maintained. It is best to overhaul the plants thoroughly when repotting them. Shake away all the old compost and cut back the old, rootless stems to the living roots. The compost should consist of a mixture of peat, A.1 fibre and Sphagnum-moss in equal parts, and the material should be placed in the receptacles rather firmly. This Orchid is best grown in small, well-drained pots or pans stood on a damp surface, when overhead syringings will generally be sufficient to maintain it in healthy condition.

Many growers attempt to cultivate E. Veitchii in too much warmth, yet it is one of those plants which delights in an even temperature the whole year round, and when placed in unsuitable quarters soon becomes infested with insect pests, which do irreparable harm. At no season should this Orchid be subjected to a dry treatment, but much less moisture will suffice during the winter than during its growing season. The plants, after repotting them, should be examined from time to time to see that none is suffering for want of water at the roots, as if the latter are allowed to become dry for any considerable length of time they may shrivel and die. When grown in a close, moist atmosphere, especially during the winter, E. Veitchii is liable to attacks of black spot disease, hence, the necessity of careful attention at all times. *J. T. B.*

TWO NEW CYPRIPEDIUMS.

We have received flowers of two charming hybrid Cypripediums from Mr. F. C. Puddle, gardener to Lady Aberconway, Bodnant, Taly-Cafn, North Wales, where they were raised:

C. Cyrestis (C. Psyche × C. Golden Fleece).—A very beautiful hybrid with large, white flowers that are very faintly dusted with purple specks on the wavy petals, but have heavier, though still small, spottings of purple over the centre and base of the dorsal sepal. The lip is white with a few minute purple dots and the staminode is pale creamy-yellow.

C. Psyche was obtained by crossing C. bellatulum with C. niveum, while C. Golden Fleece derives from C. insigne Sanderae and C. Antinous. The last named hybrid is the result of crossing C. Actaeus with C. J. Howes.

C. Eronia (C. Duchess var. Marica × C. Chas. Puddle).—This is a fine, large flower with yellowish-green petals that shade to almost white at the tips and have deeper green veinings. The white dorsal sepal has a small green basal area, and on this, and also extending a little into the white portion, there are purple spots. The lower part of the dorsal sepal is somewhat contracted, otherwise the flower would be a very fine one. The lip is green and purplish-brown, betraying in its form and colour descent from C. villosum.

One parent, C. Duchess var. Marica is derived from C. aureum var. Surprise and C. insigne Sanderae, and it is through C. aureum var. Surprise that C. Eronia obtains its obvious villosum characters, as that hybrid was produced by crossing C. nitens Sallieri Hyeanum with C. Spicerianum, and the parentage of C. nitens is C. insigne × C. villosum.

It is always interesting to notice, as in this case, how the characters of certain species persist through several generations of hybrids.

INDOOR PLANTS.

NEPENTHES.

The Nepenthes or Pitcher Plants are not difficult to cultivate, and well-grown specimens suspended from the roof-rafters of plant stoves are among the most attractive occupants of the houses.

They may be raised from seeds sown on the moistened surface of a mixture of fibrous peat and Sphagnum-moss in a well-drained pan, covered with a bell-glass, and placed in a moist frame. The seeds should be germinated in a temperature from 80° to 85°. If the compost is kept moist without dislodging the seeds, the latter will germinate in about a month from the time of sowing. After several leaves appear, transfer the seedlings to small pots or pans about one inch apart. When strong enough, place them singly in small sixty-sized pots, and when large enough transfer them to baskets, adding two parts turfy loam to the above compost.

Cuttings of one-year-old growths of Nepenthes produce roots freely, and established plants may be had in a comparatively short time. Invert small sixty-sized pots on a warm damp bed of fibre, and press the rims of the receptacles slightly down in it. The lower ends of the cuttings, divested of leaves, should be pressed through the apertures of the pots down to the fibre, and the warm, moist air will cause roots to develop from the stems. When well-rooted, the cuttings should be potted, preparatory to establishing them in baskets, for producing bold, healthy leaves with their wonderful marbled pitchers—which constitute the beauty of the plants. The flowers are not without interest, and some may be retained for the production of seeds.

For promoting full growth, a porous, yet somewhat more substantial compost than previously advised should be employed. A suitable mixture consists of two parts each of fibrous loam and peat and one part Sphagnum-moss, with the addition of a little broken charcoal and sharp sand. The plants thrive in a warm, moist atmosphere, and should be shaded from the sun when necessary. From March to September copious supplies of tepid water are required for keeping the material in the baskets moist, though it must not be made sour by an excess of moisture. Syringing is usually necessary twice a day during the summer, reducing the moisture, both at the roots and in the atmosphere, on the approach of autumn, and still more during the winter.

Established plants should be re-basketed in February or March; remove all the old, sour soil, and substitute new compost of the kind already recommended. *H. S. Patton.*

HARDY FLOWER BORDER.

ERYNGIUM GIGANTEUM.

Although the name of giganteum might almost induce the reader to suppose that Eryngium giganteum is the "giant" of the family, it is not so. Some species, such as E. pandanifolium, are taller, but it is still a large and handsome Sea Holly. It is an excellent border plant, although not nearly so much seen as it ought to be. This is probably largely due to the fact that it is a biennial, while the vast majority of the Sea Hollies are perennials. This, of course, means that it dies after flowering, and it is necessary to sow seeds annually if it is desired to maintain the succession. Yet it is quite a good plant, and worthy of the trouble it involves, and it is very distinct in its way from the greater number of the Eryngiums commonly cultivated. It grows about three feet in height, and has the bold foliage common to most of the Sea Hollies; the involucre is of a distinct ivory-white shade. It is not difficult to raise from seeds, which are sold by some seedsmen, but it is necessary to warn the purchaser not to be disappointed to find that only a proportion of the seeds will germinate, as many are infertile. They should be sown under glass in spring, the seedlings pricked out, so soon as fit to handle, into boxes at a distance of about three inches apart, and planted out in July. With reasonable care they will flower the following year. *S. Arnott.*

CAMPANULA PERSICIFOLIA.

Of the Bell Flowers, Campanula persicifolia and its many varieties are probably the most valuable from the point of view of utility.

They are of the easiest culture and suitable for massing in separate beds, or for grouping in borders. They also respond readily to pot cultivation and are particularly adapted to room and conservatory decoration.

The flower spikes, which in the newer varieties, grow from four feet to five feet high, present a wonderful display of dainty blossoms ranging through the most delicate shades of palest blue to violet and white. For supplying cut blooms, this Campanula is of exceptional merit, and at least one market grower close to London finds it worth while to grow the well-known variety Telham Beauty by the thousand under field conditions.

Although these plants are so adaptable, and will grow almost anywhere, they naturally thrive best when afforded a deep, well-cultivated loam in a sunny position, and respond readily to annual top-dressings of stable manure.

Frequent division of the roots is necessary to keep up the vitality of the stock, and by this means a plentiful supply of young plants may be obtained each autumn.

When the varieties Telham Beauty and Fleur de Neige were introduced a few years ago, they represented a great advance on the type, yet several well-known hybridists have succeeded in evolving a new race far in advance of even these two excellent varieties.

The following sorts were noted during the past summer as being particularly fine:—Queen of June, tall and rigid in growth, producing dozens of pure white bells; Fairie Queen, a dainty variety with large, greyish bells; and Everest, with soft blue flowers produced on much-branched spikes.

There are also one or two "cup-and-saucer" varieties which are exceedingly attractive, and of these I would strongly recommend The King, rich deep blue, inclined to violet; and Crescent, the purest and most free-flowering white sort. *R. K.*

HELENIUMS.

Amongst the flowers that add colour to the herbaceous border during autumn, the Sneeze Worts take a prominent place. They are vigorous-growing plants, thriving in any ordinary garden soil, and it is evident from the numbers seen in small gardens at the present time, that they are very popular. This is not to be wondered at, as all are excellent for creating fine effects in the garden, or for indoor decoration, as they remain for a considerable period in fresh condition when cut. Like most rampant-growing perennials, it is found advisable to lift and divide the clumps every year, preferably in early autumn, immediately after the flowering period, planting only the strong young parts from the outer edge of the clumps.

Amongst the better known and useful varieties, H. autumnale is a showy plant from five to six feet high, producing yellow flowers from August onwards. H. Riverton Beauty is also a tall-grower, suitable for the back of the border or for clumps in the shrubbery; this is a rich gold with a brown centre, giving a mass of brilliant colour when the autumn sun shines on it. This and other varieties are particularly fine if a mass of a dark-coloured Michaelmas Daisy is planted near them.

H. Riverton Gem is more bronze than the preceding, but is equally as good for garden decoration or for cutting. H. pumilum magnificum is a dwarf form suitable for the centre or front of large borders; this grows only from two to three feet high, and is a sheet of gold for many weeks. H. superbum rubrum is very like H. Riverton Beauty in height and habit, but has flowers of a charming bronze colour. H. Crimson Beauty is a variety of more recent introduction and is becoming one of the most popular members of the family. Its habit is all that can be desired for a position in the front of the border or for filling large beds in the flower garden. This, combined with the attractive bronze-carmine colour and the long period it remains in good condition, makes it a plant that should be planted freely where a good display at a small cost of labour is required. H. cupreum will be found to be much the same in habit as the last, but the colour is not so striking, being a dull mahogany.

When planting these Sneeze Worts in mixed borders, consideration must be given to the colours of the flowers of the plants that are closely associated with them. *R. F.*

FLOWER GARDEN.

DIMORPHOTHECA ECKLONIS.

This South African Daisy differs from the other members of the genus by being of a semi-shrubby nature, its growths, with the exception of the flower-bearing shoots, being woody in texture. D. fruticosa is the only species similar to it in this respect, but in this instance only the bases of the stems are woody. D. Ecklonis is seldom seen in cultivation, but is very useful for bedding out in sunny positions.

It makes a bushy plant two feet or more in height, its strong, purple-tinted, branching growths being clothed with numerous dark green, sessile leaves. These are from one inch to four inches in length and rather variable in shape, the lower ones being oblanceolate, while those on the flowering shoots are almost linear. The margins are distantly and irregularly toothed and the apex usually acute, though sometimes obtuse. The terminal flower-heads are produced in great profusion, especially during warm, sunny weather, from early July until the autumn frosts arrive. They are three inches in diameter, the rosy florets, numbering about sixteen, being about one-and-a-quarter inch long, pure white on the inner surface and heavily streaked on the outer with deep violet-blue, the small, disk florets being purplish-blue in colour. The flowers do not open during dull weather, though the richly-coloured buds continue to make the plant attractive.

This beautiful Dimorphotheca will survive the winter for several years in the warmest parts of the country, but for all practical purposes it is best raised annually from cuttings, which should be inserted in warm cases during late summer, established in a warm house, then wintered in a frost-proof frame, and finally put into flowering quarters at Dahlia-planting time. D. Ecklonis sometimes ripens a quantity of seeds which germinate freely and form an extra means of increase. *A. G. F.*

TREES AND SHRUBS.

HYMENANTHERA CRASSIFOLIA.

A native of New Zealand, from which country it was introduced in 1875, this shrub is a useful plant for use on the rock garden of moderate size. Besides being of interest as a garden plant it is of great interest to the botanist as it belongs to the Natural Order Violaceae.

H. crassifolia forms a low-growing, rounded bush, three feet or more in height and considerably more in diameter, composed of numerous, stiffly-branched and rather flat-growing, light-grey growths which are thickly clothed with numerous, small, semi-persistent leaves, those at the bases of the shoots usually remaining throughout the winter. These leaves are obovate in shape, have entire margins, and are either rounded or minutely notched at the apex. They are about half-an-inch in length, rather thick in texture and rich glossy green. The flowers are produced singly or in clusters of two or three, on short stalks, from the axils of the leaves; they are insignificant, but are followed by a host of small, round, white berries, some of which are sometimes blotched with purple; these fruits are very attractive during autumn and early winter.

H. crassifolia is quite hardy and succeeds in a sunny position in loamy soil, while it may be propagated either from seeds or cuttings. *A. G. F.*

BULB GARDEN.

THE FUTURE OF THE COLCHICUM.

It is evident that there has been within recent years a much higher appreciation of the value of the autumn-flowering Colchicums, or Meadow Saffrons, for the garden. The old C. autumnale, which is wonderfully attractive in masses in grass, has been cast into the shade by such species as C. speciosum in several varieties, C. Bornmuelleri, C. giganteum, C. Decaisnei (Fig. 136) and others. And now there is offered in the Dutch market a series of named Colchicums, apparently the pioneers of a small army of Meadow Saffrons of what will, doubtless, be superior to existing forms. This development will be viewed with mixed feelings by those who admire the Colchicum, but who will be dismayed to think of the task they may have to encounter in keeping pace with the novelties. With numbers of other flowers the gardener, unless he makes a speciality of a few kinds of plants, has to consider his desire to keep his collection of the improved varieties as hopeless and beyond either his means or his garden's capacity. The Daffodil is a case in point, although an extreme one, as the Colchicum will never become so popular as that incomparable flower, but it may serve as an illustration of my meaning

If the Daffodil is thought too extreme a case let us turn to the Crocus, a race in which the older and popular varieties which held the field so long have been threatened with exclusion by the improved varieties. Of the latter there are now so many that choice is difficulty, and the endeavour to keep up with the times more difficult still. It has been the same with many other flowers, bulbous and non-bulbous, and now the Colchicum is about to present the same problem. I hope it will not be thought that I am opposed to new varieties which are improvements upon old ones. This is not the case, and I am testing a few of the new Colchicums this season, so as to see for myself if they add to the beauty of the garden more than the old species and their few varieties. It would be interesting and also of some value if the origin (as to parentage, if seedlings or selected varieties from the several species) could be stated. Somewhere about a dozen varieties are offered under such names as President Coolidge, Rubens, General Grant and Lilac Queen, and some are credited with an Award of Merit, probably from the Dutch Bulb-Growers' Association. My excuse for this note is that of a life-long interest in the Colchicum and its value in the garden.

Since writing the above, I have been given to understand that the new Colchicums have been obtained by crossing C. Bornmuelleri and C. giganteum with C. speciosum and its white variety. I observe that one British catalogue offers no fewer than sixteen varieties. What appears to be the most distinct is a double variety named Water Lily, which is said to have light lilac-mauve flowers. It will be of interest to see whether the growing taste for the Colchicums is such as to absorb readily so many new varieties in one year. May I be allowed to add a warning to those thinking of planting Colchicums? This is that they should not be planted in grass to which animals have access, as they are poisonous to cattle or other ruminants. *Septuagenarian.*

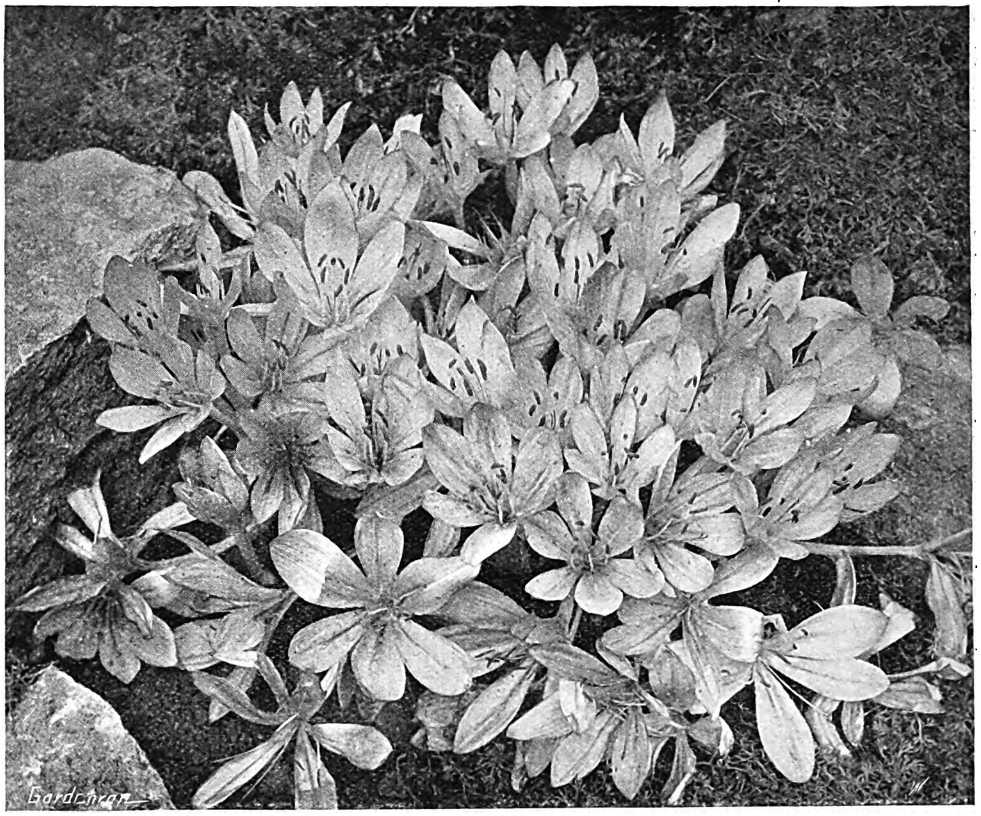

FIG. 136.—COLCHICUM DECAISNEI.

COLCHICUM DAENDELS.

This is the first of a group of new hybrid Colchicums, or Meadow Saffrons, to bloom, with me, this season. Its parentage is said to be C. Bornmuelleri and C. speciosum, and in the lists the colour is stated to be the same as that of C. Bornmuelleri. It is a very fine Colchicum and marks an advance in the flowers of the Meadow Saffrons; I am looking forward to some others blooming. The colour on opening is a pale lilac, and the blooms are then a little disappointing. They afterwards increase in size until they outrival the finest forms of C. speciosum, and the colour deepens to a bright purple. The plant is tall; the white tube is strong and bears up the flower well instead of falling over in bad weather, as is too common with some of the other Colchicums.

Several flowers are produced in succession from the same corm. Altogether I am more than pleased with C. Daendels, and I am satisfied that there is a future before these hybrid Meadow Saffrons. *S. Arnott.*

NOTICE OF BOOKS.

Plants of New Zealand.

This is the third edition of Laing and Blackwell's excellent book.* It is not a manual of the New Zealand flora, for it gives botanical details of only some three hundred selected species of certain genera, and these do not include the Mosses, the Ferns, the Grasses or the Sedges. Still less can it be regarded as a horticultural treatise, but it is a book of the greatest interest to those whose horticultural knowledge goes beyond the production of florists' flowers.

The General Introduction is lengthy and varied. For the information of those whose botanical knowledge is meagre, it gives a clear, concise and simple account of the functions of different parts of plants, whilst for the budding botanist it provides a fascinating "Key to Classification," which should provide him with intellectual entertainment far surpassing that of the crossword-puzzle. In it also we are told something of the geographical positions and of the varied climates of New Zealand. There is a general survey of the various plant communities in one of the strangest floras in the world. This is given under the following headings:—(*a*) The Open Country, with its Grasses and Sedges; (*b*) The Fern Lands, a special feature of New Zealand; (*c*) The Bush, with its forest trees, its lianas and its epiphytes; (*d*) The Scrub, a sort of Heath gone mad; and (*e*) The Alpine Regions, with Nature's rock gardens.

In this introduction are found disquisitions on the Age, the Origin and the Affinities of this unusual flora, with special reference to its relationship to the floras of Australia and South America, and the theories advanced to account therefore.

Following the introduction are the detailed descriptions of the three hundred selected species, with less formal allusions to many others. In the short botanical descriptions abstruse technical terms frequently give way to simpler English words, and in the case of most species we are given the habitat, the native name, and the settler's name for each. Interspersed with these descriptions are many notes and memoranda bearing on all sorts of subjects connected with the plants under review.

Amongst the subjects thus dealt with are the qualities of different timbers; the difficulty of getting large trees to the saw-mill; the uses and methods of collection of Kauri Gum; the economic uses of various plants; the methods formerly adopted by the Maoris in preparation of various foods from most unpromising materials; old Maori proverbs and legends connected with certain plants; the toxic properties of Coriaria (Tutu), and how good Bishop Harper was nearly poisoned by partaking of Tutu wine made from its berries; the peculiar behaviour of the roots of the Mangrove, in growing upwards out of the mud into the air, and why; the methods of pollenation in certain plants; xerophytic plants; the colour (or rather its absence) in the flowers of New Zealand Gentians, Myosotis and Clematis, with theories to explain it; juvenile and adult forms in many species; and so on. There seems no end to the subjects and theories referred to, and all of them fascinating to the enquiring mind.

Special mention must be made of the illustrations in this book. There are 175 photographic reproductions—all of them good and many of them of exceptional excellence. The subjects of these range from open country, forest trees, alpine scenes and individual plants, to leaves, flowers and fruits, some of them given life size.

Many changes from the hitherto accepted nomenclature will be found, some of which will no doubt be distressing to horticulturists and nurserymen. For example, the shrubby Veronica now becomes Hebe; Olearia insignis becomes Pachystegia insignis; Gaya Lyallii is Hoheria Lyallii; Rapanea (Myrsine) Urvillei is Suttonia australis; Calceolaria Sinclairii is Jovanella Sinclairii; Olearia Fosteri is O. paniculata; and Aristotelia racemosa is A. serrata; and so on.

English gardeners who find difficulty in distinguishing the various species of shrubby Veronica (or should we say, Hebe) may find comfort in knowing that the authors speak of their "protean fickleness of form," and after noting the varying views of different botanists as to the actual number of distinct species, they say "there is no possibility of fixing definite limits to the species by morphological methods of the ordinary systematist."

One cannot be expected to agree with everything in any book, and this one is no exception. On page 190, I find Pittosperaceae called "The Matipo Family," though a few lines further on we are told that the application of the name 'Matipo' to Pittosporum is a misnomer, as that is the native name for a species of Suttonia. Why, then, should the authors have perpetrated the very error that they are condemning in others?

Then, on page 233, Hibiscus diversifolius is described as an annual. The *Manual of New Zealand Flora* gives it as a perennial, and that is correct. As proof of this, I enclose a photograph taken this year from a plant that has already flowered well in each of the last three years (Fig. 134). Again, on page 288, it is stated that the aerial roots of Metrosideros tomentosa "do not reach the ground." One is constrained to quote W. S. Gilbert, "'What, never?' 'Well, hardly ever.'" for at Tresco Abbey these may be seen having taken a very firm hold of the ground beneath the tree. And on page 388 the small shrub, Hebe (Veronica) Lavandiana, is described as a herb.

The Glossary at the end of the book is inadequate; for, although throughout the book technical terms have been used so little as possible, their complete avoidance could not be expected; and several of those used do not appear in the Glossary. In the very first test I made I failed to find "xerophyte" though this had been alluded to eight times in the body of the book. These, however, are small matters, and detract but little from the excellence of this most readable and informative volume. Its perusal has given me great pleasure and much instruction. Its discursive informality is one of its great charms. It is so full of varied and interesting matter. The authors are not unnecessarily dogmatic; they usually give both sides of a controversial question; and they have avoided, so far as possible, the classical technicalities so dear to the heart of the botanist, but so troublesome to the uninitiated. This is a book that should be read by all who are interested in New Zealand and its Flora. *A. H. Williams.*

NOTES FROM A WELSH GARDEN.

Corokia macrocarpa is a shrub of much distinction, more especially by comparison with the better-known members of its genus, which, though undoubtedly attractive, are not remarkable for beauty of foliage. In this species the leaves are some two or three inches long, and nearly one inch wide; they are very pointed, and while the upper surfaces are a bright glossy green, the underparts are pure white. This handsome foliage, as is the case with most of the shrubby Senecios of similar colouring, never looks so well as it does in autumn and early winter, when the leaves not only expand to their fullest dimensions but develop a stronger, more definite contrast in white and green. The golden, starry flowers and yellow fruits are very much like those of the more familiar species, but they are larger.

Among the more or less prostrate Cotoneasters, C. horizontalis still holds its own as a berry-bearing shrub. There are, however, many forms of this fine old shrub, some being more reliable croppers than others, and they vary very considerably in habit of growth. C. h. perpusilla, for example, which is a flat-growing variety, appears to be represented by two very distinct types, one having smaller leaves and less vigour than the species, while the other has larger foliage and extraordinary robustness. These latter characteristics belong to the form of C. h. perpusilla, which the late Mr. E. C. Buxton claimed to have discoved in his garden some years before the now better-known one was introduced from Tibet, and as a fruiting variety it is superb.

C. hupehensis I have had for a good many years. It has not grown taller than about five feet. As a flowering shrub it is certainly far ahead of most of its kind, the pure white flower-clusters standing erect on the broad, fan-shaped branches, after the manner of those of Spiraea bracteata. Until this year, C. hupehensis had scarcely fruited at all, but it is now carrying a fair crop, and the crimson berries, large and almost globular, are singularly handsome.

It is an ill wind that blows good to nobody, and the rainy season has been just what some shrubs of this dry woodland bank enjoy. Gaultheria trichophylla is a case in point, this beautiful little plant now ripening its third crop of big blue "berries," Among other so-called peat plants which are thriving in our woodland loam, Vaccinium corymbosum is carrying a bountiful yield of its Grape-blue fruits which will be succeeded by the beautiful autumnal tints for which that species is famed. V. glauco-album is an even choicer member of the genus, an evergreen whose large leaves have white undersides and the jet black fruits a dusting of blue-white bloom. This Himalayan plant seemed a little tender at first, but it is now rarely injured to any extent by frost.

Euonymus latifolius, although not yet half-grown, has been remarkably beautiful, its large, bright, rose-pink and orange fruits hanging in profusion among the broad, fresh green leaves. With the exception of the best forms of our own Spindle Tree (E. europaeus), this is the most ornamental of the genus which I have seen, and it is a vigorous, healthy grower. E. nanus, not much over a foot in height, often fruits well in poor soil on a sunny, rock-garden ledge, and under similar conditions that engaging little, prostrate shrub, Muehlenbeckia axillaris (nana) is now threading its slender strands with its glistening pearls.

Sollya heterophylla, though not fully hardy here, is always a cheerful object at this season, and its bright blue bells swinging at the tips of their hair-like stalks, are exceedingly pretty. A month ago I stated in these columns that Parochaetus communis promised to do no more than emulate a Clover field of lush flowerless growth, but during the latter part of September it broke into a galaxy of blossom, the mat of vivid green, brown-flecked trefoils—over a yard across—being adorned by hundreds of Pea-flowers in the blue of Gentiana verna. I still think, however, that there are good and inferior forms of this delightful plant, for some other specimens, from different sources, growing close to the above, and in precisely similar conditions, have not yielded a blossom.

Leptodermis pilosa does not do as well here as in the south-west, but its white, tubular flowers, although sparingly borne, are not unwelcome these autumn days. This also applies to Malvastrum phoenicium, which seems to be more susceptible to frost than the foregoing. Its cup-shaped, rather small blossoms of a full crimson are not particularly attractive, but the foliage and habit of the shrub are both good.

When there are limitations to one's space, subjects which need considerable room for natural development have to be carefully considered on their merits. But while I am reluctantly obliged every now and then to remove some in favour of others, the sword of fate has not yet descended upon Spiraea (Sorbaria) arborea, and this is a shrub of such superlative quality that I very much doubt if it ever will. Throughout the later summer this most elegant species bore a long succession of its enormous, cream-white panicles of blossom, but that is not all, for the large and beautiful pinnate leaves which hang from the arching branches with such an easy grace are now assuming the bronze and yellow hues which precede their fall. S. arborea needs considerable space and good living, and for these no shrub makes a more generous return.

The winter-flowering Periwinkle, Vinca difformis, is now approaching its best, its starch-white or very pale blue blossoms deriving some protection from frosts from the branches of the shrubs which over-shadow it. The Chinese Saxifrage Fortunei which has occupied a similar position for many seasons is also coming into flower. Geranium Wallichianum var. E. C. Buxton, if it does not actually prefer a cool and sunless spot, always looks better in shade, full sun tending to give its clear blue petals a purplish tint. Even so, a plant of this useful, late-flowering Geranium which is sprawling about between some clumps of Kniphofia Macowanii, makes a telling contrast with the soft scarlet of the latter. G. grandiflorum is another species which can do with considerable shade, and one of the few which may be relied upon to yield a good crop of autumn flowers. There is an undeniable charm about the fresh clean blue of this fine old Cranesbill, and I know of few better carpeters for growing among shrubs and trees than this. G. asphodeloides is a hardy, robust species, making trailing growths a yard long, and if it is cut back so soon as the first flowers are over it will invariably give a good account of itself at this season. The flowers, nearly two inches across, are a bright silver-pink.

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* *Plants of New Zealand*, by R. M. Laing and E. W. Blackwell. Humphrey Milford, Oxford University Press, London. Price 18s. net.

Hypericum repens is still flowering profusely in spite of the weather, and another rock garden species of this genus which is always later than most of its class here, is H. polyphyllum. Though it has a habit of reflexing its beautiful blue rays, save when the sun is warm, Felicia rotundifolia still gives a bit of bright colour in a somewhat rain-saddened rock garden. Oxalis magellanica is also flowering freely, and a conspicuous tuft of pale lavender on a high and comparatively, dry position, shows that the lovely Scabiosa graminifolia, though a native of the sun-baked limestone of southern Europe, has survived the ordeal of a hopeless summer with commendable fortitude. *A. T. Johnson, Ro-Wen, Conway, North Wales.*

NOTES FROM WISLEY.

In addition to several very cold nights a frost has affected my own Dahlias. I was pleasantly relieved, therefore, to find that the trials of this flower at Wisley were quite unaffected, even although October was well advanced. There was as good a show of Dahlias at the gardens on October 8 as there has ever been this year. A feature of the Dahlia trials this year has been the excellent display made by the Mignons, which commenced to bloom so early as July. No new awards were made to members of this section, but a number of varieties were Highly Commended, including Coltness Yellow, Coltness Salmon and the bright, crimson-flowered Harold. Many new awards, however, have been made to varieties belonging to the Decorative section, among which are the Rev. M. Herbert Lee, with handsome blooms of bright magenta; and W. D. Cartwright, with large yellow flowers which have a darker centre, and which are rather similar to those of Berengaria. A very free-flowering variety with buff-pink flowers is well-named Freedom, while another attractive Decorative sort is J. L. Crowther, the colour of which is not easy to describe as it betrays tinges of buff and smoke grey in addition to the pink ground. In the small-flowered Paeony section Mrs. J. Goddard, bearing large numbers of scarlet blooms, and the no lesss floriferous Elma D. Cook, with yellow flowers, suffused with white, were among other good varieties that received an Award of Merit.

Among the Dahlias which have received awards in previous years, and which form the bulk of the collection at Wisley, an outstanding variety is Jersey Beauty which is one of the best, if not the very best, deep pink-flowered Dahlias. The pink flowers of Secretary Voors are also charming, both on account of their colour and their agreeable form. A noteworthy decorative variety with blood-red flowers is Reginald Godfrey, while two excellent yellow-flowered Dahlias are Psyche, a large, Paeony-flowered variety, and Cintra, belonging to the small, Paeony-flowered group. Striking colour is a feature of Rapallo, the petals of which are deep red with a yellow rim and reverse. The latter is of more value for decoration in the house than in the garden, and the form of the flowers might well be improved.

The wet season has been very favourable to the growth of the commercial fruit trials of Apples, Pears and Plums. The majority of the trees are now from three to four years old, and some of those on dwarfing stocks have already commenced to fruit and to show promise of commercial value.

The fruit crop, as a whole, has been very satisfactory this year at Wisley. Apples have borne well and as a result of the exceptional amount of rain the size of the fruits has been much above the normal. Some, in fact, have been quite out of character on this account. Pears have been irregular and Plums poor, but good growth has been made, and if we have a favourable season next year an extremely heavy crop should result.

Exceptionally fine crops of bush fruits were produced, and the Black Currants were some of the best ever seen at Wisley.

The new building for storing and exhibiting fruits is now finished and has a most attractive appearance. About fifty varieties of Apples, including good specimens of Margil, Dr. Clifford and Peasgood's Nonesuch, and such Pears as Brockworth Park—of which there has been a fine crop—are now in view. Fruits in quantity are also temporarily stored in the spacious loft under the roof of the building.

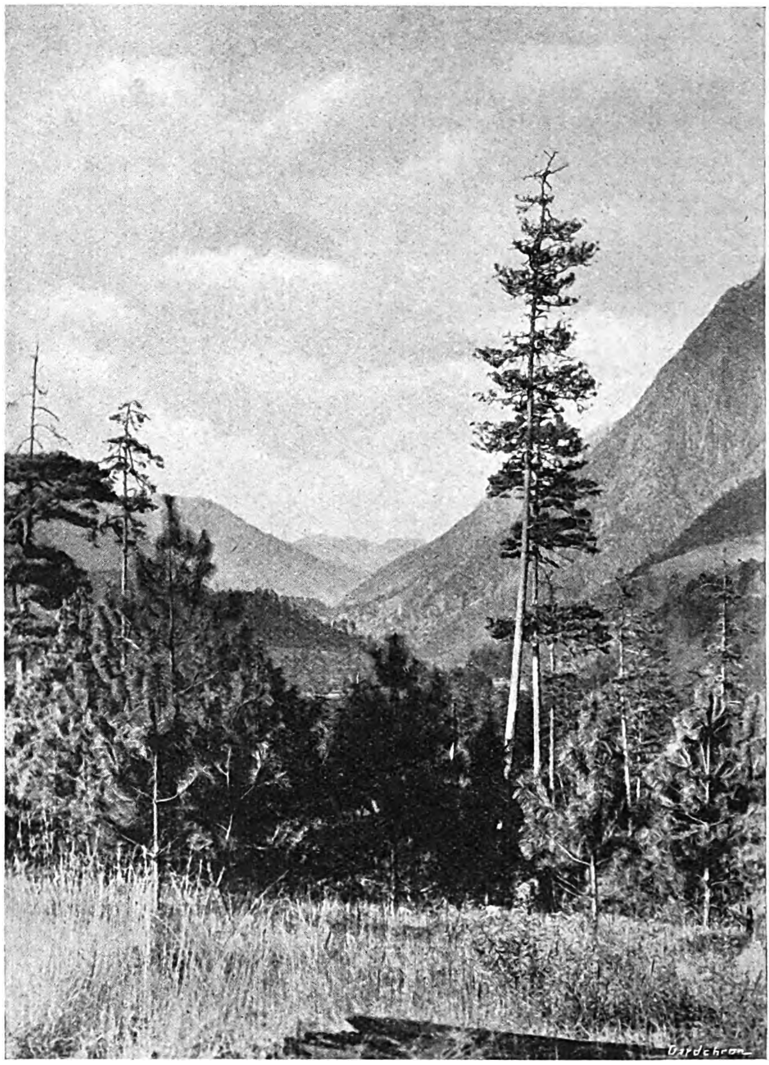

FIG. 137.—THE LOHIT VALLEY: DRY REGION, WITH PINUS EXCELSA. (see p. 309).

The heavy rains have stirred up the ponds and the water has become very muddy. This, however, has served to enhance the brilliance of red-foliaged plants by the water-side, which are most conspicuous in contrast. One of the most striking plants is Rhus cotinoides, which is even better than the very bright red-leaved Rhus Cotinus atro-purpurea. Other foliage around the ponds, which the hand of autumn has enlivened, includes that of Cornus sanguinea alba and Nyssa sylvatica, which also belongs to the Dogwood family. It is a native of North America and makes a handsome tree. In addition to autumn foliage, the deep yellow flowers of Senecio clivorum, and its bold leaves, show up particularly well against the muddy water

A seldom-noticed plant on the pond bank, possibly because of its low stature, is Betula nana, the Dwarf Birch. It rarely exceeds two feet in height and occurs in many hills in the Highlands of Scotland. It is also found in Lapland, where it is of considerable economic importance.

In the wild garden there has been a fine display of hardy Cyclamen, and quite a large area has been covered with their flowers since the beginning of September. Their foliage is now pushing through the ground, most of which is most attractively marbled. The corms, which were planted just over a year ago are very large, and in some cases measure nine inches in diameter. Blooms of Colchicums, such as C. speciosum, C. s. album and the rosy-flowered C. cilicicum are also very welcome at a time when flowers in the wild garden are scarce.

The trial of Daffodils is still being carried on and new varieties have been received from growers so far distant as Canada. Before planting, all the bulbs are thoroughly sterilised.

The herbaceous borders are now past their best and many plants have gone to seed. Among them are Sedum spectabile. and Bocconia cordata. Both these plants, however, are almost, if not quite, as attractive in their present stage as, when in flower. Many good groups of Asters, both of the Novi-Belgii and the Amellis sections, are to be seen, while Japanese Anemones and late-flowering Monkshoods—such as Aconitum Wilsoni and the much dwarfer Fischeri—lend colour to the scene.

The laboratory staff at Wisley has now been augmented by Mr. Tincker, who has taken up his position as Keeper of the Laboratory. *J. E. Grant White.*

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INTERNATIONAL HORTICULTURAL CONGRESS IN VIENNA

IN order to mark the one hundredth anniversary of the establishment of the National Horticultural Society of Austria (Osterneichische Gartenbaugesellschaft), a great International Horticultural Congress was arranged and took place in Vienna from September 19 to September 25 last. Various countries and great horticultural societies were invited to send representatives to read papers at the Conferences and take part in the discussions, and in all some four-hundred members attended the meetings from at least twenty different countries, including most European countries, the United States of America, Canada, Japan, Egypt and the Argentine. The British Government was represented by Mr. H. V. Taylor, the Royal Horticultural Society by the Society's Botanist, Dr. A. B. Rendle; by the Director of Wisley, Mr. F. J. Chittenden, and by Mr. G. W. Leak, Member of Council; while Mr. B. H. Rendle and Messrs. C. Engelmann and W. Treseder, well-known nurserymen, were also in attendance.

A large number of subjects relating to horticulture were brought before the Congress, which was under the presidency of Professor Dr. Wettstein of the University of Vienna, and Herr Rottenberger; Dr. Bretschneider and Herr Kratochwjlle being general Secretaries, with the assistance of Professor Dr. Sirks and Messrs. Camillo Schneider and A. Vollbracht. Every morning was fully occupied by the papers which dealt with the Nomenclature of Garden Plants (papers by M. P. Rivoire of Lyon, Mr. Ernst Krelage of Haarlem, Professor Dr. Suringar of Wageningen, Mr. C. Schneider of Berlin, and Professor Tanaka of Japan); International System of Designating Colours (papers by Dr. Krüger of Dresden and M. P. Rivoire of Lyon); the Award of Certificates to Plants and Registration of Novelties (papers by Mr. T. Macoun of Ottawa, M. P. Rivoire of Lyon, Herr F. Werner of Beuel-am-Rhein; Mr. E. H. Krelage of Haarlem and Herr F. Kratochwjlle of Vienna); Interchange of Gardeners between Countries (papers by Herr J. Furedi, Budapest; Herr W. Danhärd of Dresden and Herr A. Eipeldauer of Vienna); Flowering and Fertility of Fruit Trees (papers by Dr. W. Magnus of Berlin, Dr. F. Kobel of Wadenswyl, Herr K. Limbacher of Budapest, and Dr. F. Passecker of Vienna); Transpiration (papers by Professor Dr. Zederbauer and Dr. Buchinger of Vienna, and Dr. Eibl of Kloisterneuberg); The Formation of an International Horticultural Bureau (papers by Dr. Sirks, Mr. H. V. Taylor of London, and Herr F. Szasz of Budapest); Public Gardening (papers by Herr H. Kube of Hanover, and Herr F. Szasz of Budapest); Garden Architects (papers by Herr R. Kempkes of Berlin, and Herr W. Schmidt of Vienna); The Laws of Heredity Applied to Practical Horticulture (papers by Herr M. Becker-Dillingen, Elstertrebrutz; Dr. Tschermak-Seyemsegg of Vienna, Dr. J. de Vilmorin of Paris, Mr. F. J. Chittenden of Wisley, and Dr. F. Frimmel of Eisgrub); Nursery Practice (papers by F. Langenecker, of Schöllschitz; Herr O. Schindler of Pillnitz; Mr. J. Versely of Molitorov; Herr E. Maurer of Berlin; and Mr. O. Tounner of Ybbs); Horticultural Experiments in Schools (papers by Herr W. Lauche, of Eisgrub; Dr. W. Gleisburg; Dr. A. M. Sprenger, Dr. Ballenegger, and Herr O. Schindler, Pillnitz).

A few other subjects were also dealt with, and some were crowded out, but it will be seen that a very wide range of subjects was before the Conference, and much useful information brought together.

Probably the most useful work done was in the establishment of seven international committees, each charged with the duty of bringing together the views of the different countries upon their several subjects, such as Nomenclature, Interchange of Plants between Educational Institutions, Colour Designation in relation to Flowers, Nursery Work, Fruit-growing Research, Certification of Plants, and so on. These Committees will report to the next Congress in London in 1930, and efforts will be made to direct energies towards desirable ends and by the full interchange of information and ideas to avoid unnecessary duplication of work.

The main meetings of the Congress were held in the magnificent buildings of the University of Vienna, being opened by Professor Wettstein, the Director of the Botanical Gardens and Institute of the University; these occupied every morning of the Conference. The afternoons were taken up by visits to famous gardens and places in the environs of Vienna, including the magnificent palace and pleasure grounds of Schönbrunn, the garden of Mons. A. de Rothschild, with its fine trees and shrubs and magnificent view of Vienna and the Danube, its great range of houses for forced fruits of all kinds, Orchids and other flowers, all well cultivated, and its well-furnished fruit and vegetable quarters without any waste space; the Belvedere and other public gardens; the Botanical Gardens of the University, where are some fine trees, especially of Ginkgo biloba and Platanus orientalis, and excellent collections of Succulents, both in the houses and in the frame yards, all within a relatively small area; to various nurseries; to Baden, with its famous sulphur springs; to the great new tenement houses (where window boxes were conspicuous and well-tended); to the Prater, the great recreation ground and pleasure park of Vienna, with its pleasing woods and magnificent avenues; to Kloisterneuberg, with its great and magnifi-

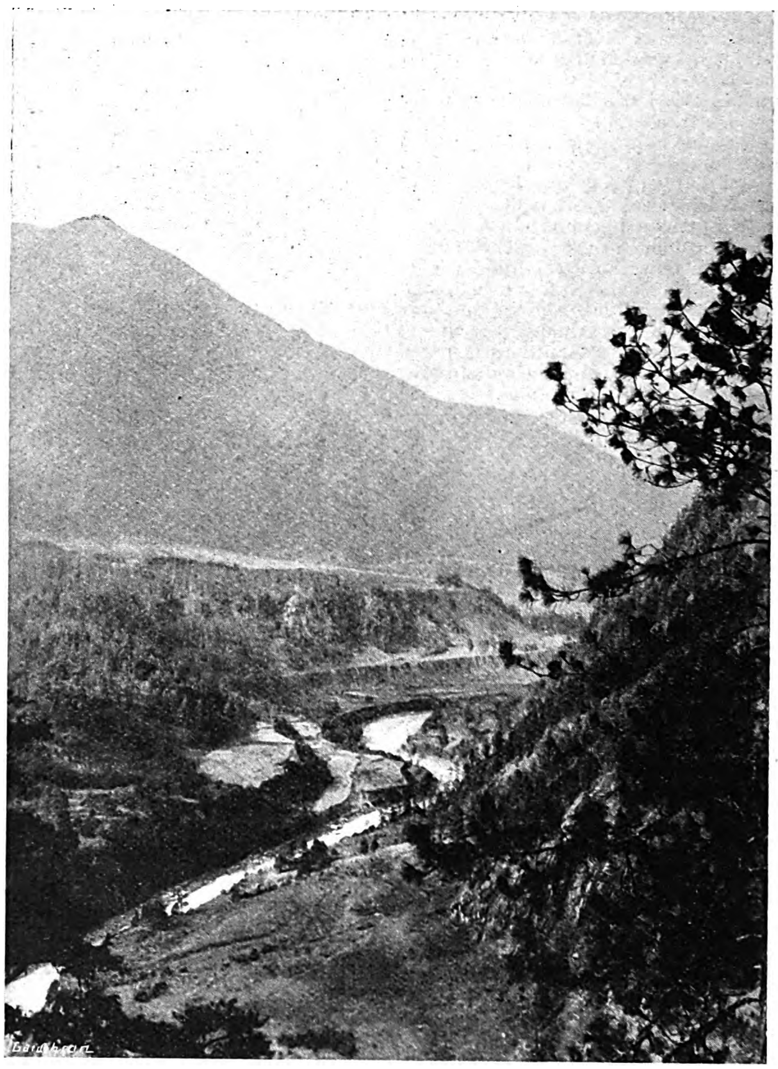

FIG. 138.—THE LOHIT VALLEY, BY RIMA.

cent church and old buildings perched upon an outstanding hill near to one of the greatest of Austria's experimental horticultural establishments; and (on the final Sunday) to the Hochschneeburg (6,450 feet) with its natural rock garden above the limit of the forests of Pinus austriaca, P. sylvestris and Picea excelsa, and partly above even the prostrate Pinus montana. Even yet there were mats of Primula minima still in flower, and plentiful blossoms of some of the Campanulas, Gentiana austriaca, G. ciliata and G. asclepiadea, Ranunculus alpestris, Arabis, and so on, but the bulk of the flowers was past, and only the mental vision could picture the wealth of flowers in July when the Rhododendrons, Rhodothamnus, Primula Clusiana, the Saxifragas, Dianthi, Tunica, and a host of others which grow there are in their beauty.

Fortunately, and in contrast to the weather at home, bright sun, except at Baden, accompanied the whole of these functions, and delightful summer weather helped to make the visits pleasant as well as profitable.

In the evenings the representatives attending the Conference were received and entertained by the Austrian Horticultural Society in the rooms of the Society; by the President of the Republic in the Foreign Office; by the Burgomaster of Vienna in the Rathaus; by the Minister for Agriculture at the Ministry; and by the Hungarian Minister at the Embassy.

The arrangements for the Conference, excursions and receptions are worthy of all praise, and reflect the greatest credit upon the organisers. A high standard has been set for British horticulture to emulate at the International Horticultural Congress which is to take place in London in July or early August, 1930, when many of the questions raised at this Congress will come up for further discussion before what is hoped will be no less representative a gathering than that which assembled in Vienna.

MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XVII.—The Lohit Valley.

We made an early start on July 16, and in two hours emerged from the forest, high above the torrent, on to a steep, rocky slope covered with thin Pine forest. Ahead of us we could see the Lohit Valley, but not the river. A long and rather difficult traverse across the face followed until finally we reached a high rocky spur, overlooking the Lohit itself, whence we could make out the small village of Kahao in the distance; we must have been fully 2,000 feet above the river then. On the dry Pine and Bracken-clad slopes (Fig. 137) were a number of more or less interesting flowers—ground Orchids (Spiranthus, etc.), Lilium taliense, Campanula colorata, Didissandra lanuginosa, Polygonum capitatum, Sedums and various Leguminosae, especially twining herbaceous species. There were also a few shrubs (Pieris, Desmodium, Sophora) and small Alders; but mostly the very steep rock-bound slopes were clothed with Pine (P. excelsa), and so, too, was the valley below, so far as the eye could range. We scampered down a thousand feet of rock to a large platform, clearly an old river terrace, from where we could see the river, still far below, on either side (Fig. 138), northwards to Rima, just out of sight behind the next shoulder, and southwards to the Mishmi Hills. The Lohit is a pretty big river—it gave me the impression of being considerably larger than the Nam Tamai—and was the colour of Lentil soup; turbulent and swift.

From this platform we turned southwards, that is, down stream, descended another thousand feet, crossed the Di Chu by a flimsy bridge, near its junction with the Lohit, and an hour later reached Kahao via cultivated fields and lanes, which were for the most part irrigation channels. We had descended about 3,000 feet, and covered about six miles in eight hours. The day had been fine, though overcast, especially in the afternoon, and no sooner did we reach Kahao than it began to rain smartly. My tent was pitched in a fallow field alongside the village, and the men rigged a shelter for themselves hard by. I had been badly bitten by blister-flies all day, and down here we were plagued all night by mosquitos and sand-flies. The next night I slept beneath a sand-fly net. Scarcely had we taken up our quarters when a party of Mishmis hove in sight, marching in single file, and all smoking their quaint pipes; of course, they halted to gaze at us, and it is a curious fact that the only Mishmi I met, either now or in the winter when we returned to the Lohit, who spoke Hindustani, was amongst them. Seeing me, and naturally taking me for a government official—the only kind of white man he had even seen or heard of—he asked me if I spoke 'Assam talk' as he called it, whereupon I asked him if he knew the Political Officer in Sadiya, and enquired about the road; and the answers he gave proved remarkably accurate. He told me it was fifteen marches to Sadiya, so that, even in my camp on the other side of the pass, I was considerably nearer to rail head in Assam than Burma. A few days later, when we were leaving, I wrote a note to the Political Officer, Sadiya, gave it to a villager, and instructed him to pass it on to the next village, and so on down the valley from village to village until it reached the plains; and it actually reached its destination in forty-two days, enabling the officer to send a reply, which I received when we arrived in Kahao, on November 11.

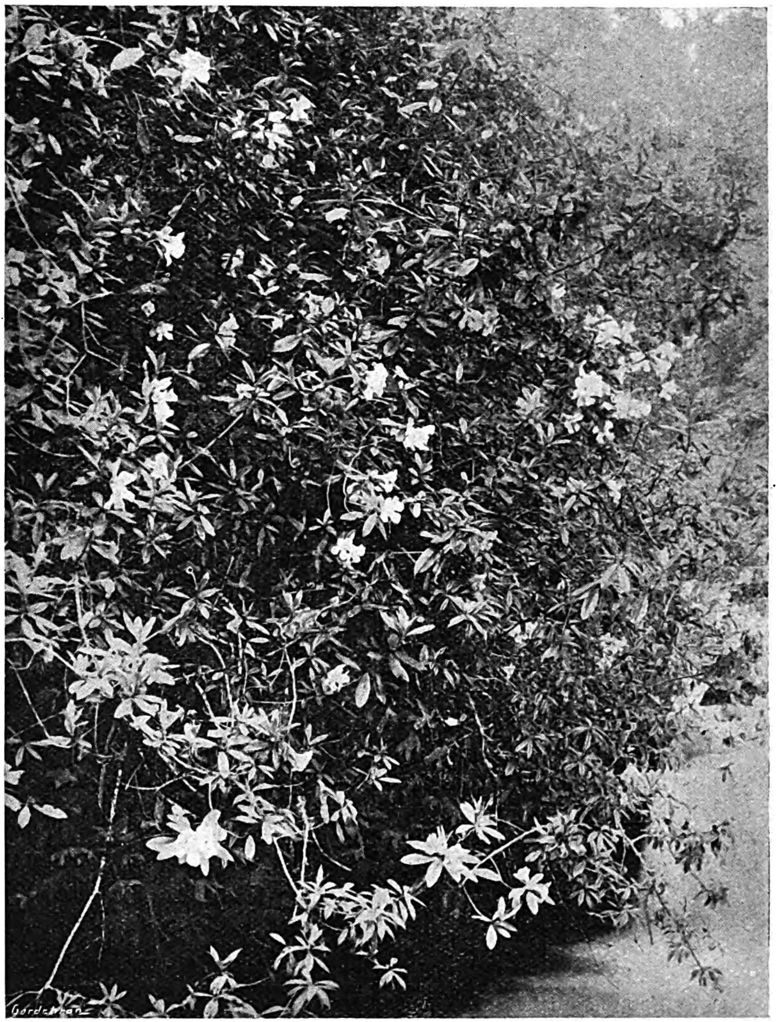

FIG. 139.—RHODODENDRON SP. § MADDENII (K.W. 7136).

On the following day my six Tibetan coolies deserted, and as no more were available at Kahao to replace them, we had to stay at Kahao for several days, while beating them up from elsewhere.

The Lohit Valley was, indeed, different from anything I had expected. Though our altitude was only about 4,000 feet, the same as the Nam Tamai, yet the country was open and rocky, covered with scattered Pines; and except around villages and in deep sheltered glens, these were the only trees! Higher up the valley, by Rima, even these dwindled almost to vanishing point, and it was only too evident that we were, despite our low altitude, on the fringe of the plateau. The climate, of course, was in violent contrast to that of the Nam Tamai—as we soon discovered. The very next day (July 17) though the valley was full of the familiar clouds when we woke, the clouds soon dispersed, the sun shone out, and the temperature leaped up to 90°. About midday a terrific wind sprang up without warning and blew with savage force till after dark, uprooting my tent; and we found that this wind, blowing up from the Assam plain, was an almost daily phenomenon, summer and winter, though most of the moisture had been robbed from it before it reached us. This accounted for the lack of trees. Little rain fell, but usually, when a lull followed a few days of storm, a drizzle set in. I noticed hardly any dew, though on clear nights we had sharp frosts in November. Thus the climate was quite like that of the lower valleys on the Tibetan plateau, and, indeed, even in July we could look northwards up the Lohit day after day and see the turquoise sky which roofs the roof of the world. I was astonished to find such a comparatively pleasant climate so close to the plains of Assam—eighty miles distant as the crow flies!

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, and October 1, 1927.

Of course, it was not really at all pleasant here; it was merely a change from the perpetual wetness of the Seinghku. Had we ascended the Lohit Valley for a couple of marches, and then climbed to 10,000 feet on the plateau, it would have been ideal, but the wisdom of doing that was doubtful, even had it been practicable. The days were hot and stuffy; the wind tore us badly and then flayed our nerves raw. Insects were rife—all blood-thirsty; at night the temperature fell only a few degrees below 70° (it sometimes reached nearly 100° in the afternoon) and exhaustion made sleep difficult. I made daily excursions after plants, and found a number of bushes and shrubs along the stream banks, including the following:—a Rose, with white flowers and small, globular, smooth, yellow fruits; Ceratostigma Griffithii, with ravishing blue flowers—it seems, like Gorse, to have flower on it always; several species of Rubus; species of Buddleia, Ligustrum, Clematis, Vitis, Elaeagnus, Philadelphus; also Ivy and shrubby Labiatae and Compositae.

Around the village were a few fruit and other trees, such as Salix, Alder, Peach, Walnut, Quince and Citrus, and I gathered in flower from the stream bed and the Rice fields a species of Impatiens (flowers crushed-Strawberry colour), Strobilanthes, Potentilla, Epilobium, Senecio, etc.—nothing very startling.

Undoubtedly the valley suffered from drought at certain seasons, and from wind (which has the same effect) always; consequently, the flora was a more or less xerophytic one. It could hardly have been chance that the under-leaf surface of a great variety of plants wore a protective covering, either of hairs or of wax. For example, three species of Rubus, two Compositae (Artemisia), Plectranthus, Philadelphus, Potentilla, Anemone, Buddleia, and one or two other plants, have the leaves quite white beneath, either due to long, silky hairs, or to a woven mat of interlocking hairs; Quercus and Salix were furnished with a film of wax, and Clematis with a short, close pile; and Bracken, Verbascum and Didissandra lanuginosa, were well coated with yellow hairs instead of the more usual white ones. Such trees and shrubs as can stand the racket are of that peculiarly dull lustreless grey-green which one associates with desert conditions; like the Date Palm and Casuarina, the graceful Pinus longifolia, which was not rare in the Nam Tamai and lower Seinghku valleys, was absent here, replaced by the glum P. excelsa, interesting because in many open spaces in the valley, particularly long abandoned cultivation, young trees obviously self-sown, were springing up by the hundred.

I collected a few cosmopolitan weeds in the Paddy fields, and a few Leguminosae on the heat-striken slopes above, and that was about all the direct addition to my collections in the Lohit Valley; but the valuable discovery that the dry zone was within easy march of Sadiya, and that with a little organisation one might get through the difficult Mishmi hills into the clearer field of action beyond was worth the trouble three times over.

By July 21, the missing porters had been replaced, and on the 22nd we started on the long ascent to the Diphuk La, with Nung, Tibetan, and Lisu coolies; these latter were a great acquisition (although I was saddled with two girls), because the Lisus are about the stoutest tribe on the frontier, and when in November we had a general strike, this labour stood firm. Unfortunately, there were very few of them, as they belong rightly to the China side, a long way east of where we were (see Fig. 135, p. 303).

We did practically the same marches retunrng as coming, and found ourselves back at the hot spring on the 24th. Of course, I noticed a number of different plants which had been missed on the way down, foremost amongst which were a big tree 'Thomsoni' Rhododendron, with polished, tawny-purple trunk and large, glossy leaves, the petiole and midrib conspicuously red (K.W. 7125), and a small straggling 'Maddeni,' which lurked beneath the bushes in rather swampy ground. The former was pretty common in one locality, where it was a feature of the forest, but its area was strictly confined, and I saw it nowhere else; of the latter, I could only find three specimens (K.W. 7171). There was also R. vaccinioides, and I found the supposed 'Taliense' (K.W. 7124) had crimson flowers, and suspect the identification. The big 'Maddeni' was still in gorgeous bloom, with many buds still to open; flowers snow-white with orange-red anthers, fragrant, in trusses of four to six.

Arrived at the hot spring, our Lisu warriors looked to their bows, and at dusk departed to ambush a couple of Takin, as we were all on short rations. As usual, the herd came down to take the waters, the hunters shot arrows into them, there was a general stampede, and about midnight everyone returned to camp. Next morning only one dead beast could be found, but as it was certain that another had been hit, the men asked leave to stay in camp that day, and try to track the wounded Takin. Nothing loath, I agreed, and while the men followed the trail (ultimately without result) I went up the sunny scree to look for Rhododendrons, which grew in dense thickets and great variety. Amongst the bigger boulders at the foot of the slope, the 'Heliolepis' (K.W. 7108) was flowering profusely; with it a bush 'Campylogynum,' with plum-purple flowers, or tending to crimson on the one hand, or to violet on the other; and impenetrable tangles of a 'Souliei'. Higher up the slope the bushes became much smaller and more scattered—an 'Anthopogon,' and a small, very compressed 'Roxieanum,' but overweighted with flowers—or, rather, fruits—in tight trusses of four to seven, the corolla persisting. The biggest specimens were so much as five feet high, but plants two feet high had flowered generously. Just off the scree, where larger bushes grew with scattered trees of Larix and Abies, was the much bigger, but obviously allied R. ixenticum, which I am told is a poor thing in flower; perhaps my dwarf R. recurvoides will prove better value. Higher up on the scree was a small 'Sanguineum,' and on the cliffs, a 'Lepidotum' made domes of colour. More interesting was K.W. 7190, which had all the appearance of being a cross between R. recurvoides, and the 'Souliei,' K.W. 7,189.

When I got back to camp (having had a delightful bath in the hot spring) the hunters had skinned and chopped up our one Takin, and we all had a good meal. Next day, we resumed our march, the fine weather breaking up as we approached the pass and the source of the Seinghku; so that when we camped on the 27th, just below the glacier lake, steady rain reminded us of what was in store just over the range. We crossed the pass next day in drenching rain, and descended the valley to my 11,000 feet camp. *F. Kingdon Ward.*

THE HEATH OARDEN.

Few people realise how much pleasure may be derived from a Heath garden—the long-flowering season and, after the initial expense, the small cost of upkeep, which becomes less each year. Most people, probably, seem to think that a Heath garden will give them about three, possibly four, months of colour in the year, whereas there is a display of some sort for eleven if not twelve months of the year. It is possible to have a winter Heath garden, and if one is only in the garden during summer, then a summer Heath garden is equally satisfactory.

The surroundings should be as natural as possible; never make a Heath garden close to the formal Rose garden. Pine trees and Silver Birch will give a good background, but away from anything formal the Heath garden may be commenced. The soil may be anything, almost, provided it is free from lime, for very few Heaths will grow in a soil containing lime. Clay is not suitable but may be made suitable by deep trenching, with good drainage and plenty of gritty sand and leaf-mould; but a sandy soil such as one sees Heather thriving on, is the best and easiest to work. For position, choose full sunlight; no more, no less. The lay-out of the Heath garden will depend on the area intended to be planted and the natural lie of the ground; for preference, if an all-the-year-round Heath garden is proposed, it should be large enough to allow the planting of each variety in fairly large groups, and the lie of the ground should be undulating, whether natural or otherwise. Paths should be narrow and winding, either of grass or dwarf Heath, or even creeping Thyme—but I prefer that sort of turf seen on moorlands or even what I call "starvation" land, where it grows dense and never tall. This will not require much mowing.

Planting may be done at any time of the year if the plants are grown in pots, but otherwise late October to late March is the season, much depending on the soil. On a light, warm, sandy soil, autumn planting is best, but on a heavy, cold soil, I certainly prefer spring planting.

If the plants are pot-grown, be sure that the roots are well soaked with water before planting, whatever time of year it may be, for nothing is so difficult to water effectively as a dry ball of soil once it is planted. There is a firm that specialises in Heaths, and all plants are propagated by cuttings and pot-grown; they are of necessity small when sent out, but obviously the constitution is sound, and in the long run they will succeed better than the plants propagated by division, but at the same time there are plenty of good divided plants to be had as well as plenty of bad ones, and much may be learned by examining them and seeing what the roots are like. If there are long, leggy, hard, woody stems, with a few fibrous roots at the base, discard them, but if they are bushy, compact, with a short mass of fibrous roots, plant them in suitable soil and they should succeed. I prefer the pot-grown plants, for although they may be smaller and more expensive, they are the best.

As the Tree Heaths cannot be propagated by division, they are usually grown in pots and are preferable so, but large plants, if transplanted carefully with a good ball of soil and roots, will move safely.

If the Heath garden is fully exposed to the sun, this often means exposure to winds also, and where strong winds are experienced it may be necessary to give the tall Tree Heaths some support or protection until they are established.

Planting should be done in large drifts of each variety, and care taken to mix the flowering periods so as to avoid large tracts of flowerless groups at any time of the year. Let each group run irregularly into those adjoining and avoid any suggestion of straight lines or round groups.

The Tree Heaths may be placed in small groups of three to nine of a sort, according to the size of the garden, and they should be planted amongst the dwarf sorts, giving them shelter from cold winds where possible. Each plant should have about four feet of space in which to develop, and the dwarf sorts from one foot to two feet, according to habit.

Once the Heath garden is planted, upkeep is inexpensive. The chief work will be weeding until the plants have grown sufficiently to cover the ground and suppress all unwanted guests. Some of the larger-growing Heaths may require trimming, and in the case of Erica vagans, this, I think, is best done in the early spring, just before growth commences. This will prevent the plants becoming too leggy and ragged and is best done regularly each year, as when cut back too hard into the old wood the plants will not break so freely, if at all.

The flowering season may begin at any time of year. E. mediterranea hybrida comes into flower first of the winter series, but last season for some reason, instead of opening in November, it was not until the end of February that it could be said to be in flower. Anyhow, being a hybrid raised by chance at Darley Dale, and sometimes known as E. Darleyensis—its parents being E. carnea and E. mediterranea—it would be expected to flower between the two parents, but my experience has generally been that it flowers before E. carnea. Much, of course, depends on the weather. It is a better and quicker grower than E. carnea but of a much paler colour; it is very free-flowering, of good habit and quite indispensable.

Then follows, as a rule, E. carnea and the hybrids, as they are so often called, but which are really varieties of E. carnea, and most of them were introduced by the firm of Backhouse. One variety, however, introduced from the

Continent stands out far and away above the others. This is E. c. Vivellii. It is a deeper colour than any of the others, and the foliage, in winter, changes to a brownish-red shade. The next best is E. c. King George, which flowers early and is of a rich colour. All the coloured varieties should be grown, for although there is not a great difference in the colour, the period is extended by them. E. carnea and its varieties will grow on a lime soil as also will E. mediterranea and E. mediterranea hybrida.

Following on the two already described comes E. mediterranea, which is taller in growth and paler in colour. It has several varieties. One of the best is the white form, and this should be grown in preference to E. carnea alba, although it flowers later. E. m. hibernica and its rare form named Brightness, hail, as the name suggests, from Ireland. The latter is worth growing if the true plant can be obtained.

From Christmas onwards one may expect to have the Tree Heaths in flower, commencing with E. lusitanica (syn. E. codonodes). The flower buds are tinged with pink and open a pure white. Its flowering season depends on the winter, but December to March will see it open. E. Veitchii follows close on this and is a hybrid between E. arborea and E. lusitanica. Roughly described, it is similar to E. lusitanica, except that the buds have no pink in their colour. E. arborea is slightly later, its habit is dense, while more so and hardier is the variety alpina, with white flowers scented like Hawthorn. E. australis is the last to flower, continuing well into May; the flowers are deep rose. It is somewhat inclined to be leggy, and therefore I always like to pinch young growths back to make them form a bushy plant. As this Heath flowers in May it is doubly welcome because it fills in a gap between the winter-flowering and summer-flowering Heaths. There is a rare white form named Mr. Robert, which was found in southern Spain by the late Lt. Robert Williams, and named after him.

Now come the early summer varieties, and I give them irrespective of their flowering period. E. cinerea is the Bell Heather, and the typical plant is known to everyone. Its forms are several, and the best are alba major, and a dwarf form, alba minor. E. c. coccinea is the brightest of all Heaths, but is a slow grower and of dwarf habit; its colour alone makes it worth growing. E. c. rosea is a very free-flowering deep rose variety, and there is an improved form, with much larger spikes of bloom, named Rose Queen. E. c. pallida has flowers of a pale mauve tint and is quite attractive if planted near a dark-coloured variety.

Erica ciliaris, the Dorset Heath, is found in this country chiefly round about Wareham. It has large flowers of a clear pink, and growing under ideal conditions will reach nearly two feet in height. It appears to succeed in moister ground than most Heaths. There are, I believe, three or four varieties, including a white one, but the best is E. c. Maweana, of strong growth and with larger flowers than the type. *Erica.*

(*To be continued*).

ROSE GARDEN.

ROSE SCHNEEZWERG.

The merits of this hybrid rugosa Rose are not widely known, otherwise it would be more generally cultivated, especially as a shrubbery plant or for forming a hedge. The pure white, semi-double flowers are produced in clusters, the season of blooming extending over such a long period as to warrant the name "perpetual."

The flowers are succeeded by small, globular berries which are now beginning to turn colour. The foliage is very attractive and not so coarse as in the ordinary rugosa type.

A specimen of this Rose in Messrs. Geo. Bunyard and Co.'s nursery at Allington has been a conspicuous object all the summer. When I saw it I was impressed with its worth, and visualised how beautiful a hedge of this Rose would appear at all seasons of the year. *T.*

MARKET FRUIT GARDEN.

There is no need for any description of the weather of the past month, for every gardener knows only too well that it could hardly have been worse. A few remarks on the effect on fruit crops of such an exceptionally wet summer may not, however, be without interest. Perhaps the most surprising feature of the season is the soundness of the hard fruits. There was less splitting and rotting amongst Plums than there usually is; and all the Apples picked so far have kept better than early and mid-season varieties commonly do. These varieties were also highly coloured; but this is generally the case in a wet season. Late Apples are maturing very slowly, but will probably colour equally well if allowed to hang long enough. It is reasonable to hope that they will also follow the example of the earlier kinds and keep well after picking.

Having thus looked on the bright side of the picture, I must now turn to the other. From a market grower's point of view, the worst features of the wet season have been the difficulty of dealing with weeds, the frequent interruption of picking, and the depressed state of the markets. On most fruit farms weeds have gained complete mastery, and the work of cleansing bush fruit plantations will be very heavy. Horse cultivation and hand hoeing have been practically useless, and there appears to be no alternative to hoeing the weeds out of the rows later on, and then ploughing between the rows so as to throw the soil towards the bushes. Much as I dislike this method, it is preferable to digging in the actual rows, particularly when there are many weeds to cover. Interruption to picking will make this a long and lingering fruit harvest. I do not expect to gather the last of my Apples until November; and meanwhile they are exposed to loss through gales. The full effect of the unseasonable weather will not, unfortunately, be realised in the present year. When a heavy crop of Apples and a summer with more than the average rainfall occur together, the crop of the following season is invariably very light. Those who have a good crop this year will therefore be wise to anticipate poor results in 1928.

Apples Plentiful.

I have often, in these notes, asserted that the habit of bearing in alternate years has much more to do with the success or failure of the Apple crop than has frost, which is commonly blamed for all failures. The present season gives support to this view. The crop reports recently published in these pages show that, in spite of the exceptionally severe spring frosts, good yields of Apples are by no means uncommon. The reason is that, after last year's almost universal failure, the trees were very decidedly in their "on" year, and the very severe frosts were not sufficient to prevent bearing in many cases. It is to be hoped that, after this, frost and cold winds at blooming time will not be given quite so often as an excuse for a poor crop of Apples.

In my own plantations the yield is very heavy. Beauty of Bath alone provided very nearly as much fruit as did all varieties together last year. Worcester Pearmain gave a splendid crop of very high quality. Cox's Orange Pippin and Blenheim Pippin are fairly plentiful with me; and Allington Pippin, for once almost free from scab, promises a heavy yield of nicely-coloured Apples. As for cooking varieties, these are nearly all over average. Of those which remain to be gathered, Lane's Prince Albert and Bramley's Seedling are loaded.

Grading and Packing.

In spite of the poor demand for Apples, I am having a thoroughly good season with this crop. Although the markets have been overfilled with under-sized and low-grade cooking Apples, and low prices have been received for many such consignments, large and clean cooking Apples have, as usual, sold fairly freely at prices not to be despised. As for dessert varieties, I have no reason to complain. Clean, highly-coloured samples have sold well enough if properly graded and packed. I am using the half-bushel box this season for the first time for dessert Apples of the higher grades, in preference to the standard bushel box, and I like it very much. As compared with the larger box, there is probably no advantage in price, but the half-box is easier to pack. Only a very slight bulge on the lid is necessary to keep the smaller quantity of Apples firm, which means less risk of bruising. I have always considered that the bushel is too large a unit for choice dessert varieties, and should like to see the newer half-box become the standard. It is just as well, moreover, to be a little bit different from the overseas grower. At a time when the general price for quite good, though mixed, samples of Worcester Pearmain was quoted at 3s. per half-sieve, in London, I received from 8s. to 10s. per half-box of about 20lb. For identical Apples, properly graded and ringed into half-sieves, I received from 5s. to 6s. only. For the very finest Apples, not less than two-and-a-half inches in diameter, there is nothing better than the single-layer tray. Worcester Pearmain packed in this realised from 2½d. to 3d. per Apple. I have just received 20s. to 22s. per half-box for my first consignment of Cox's Orange Pippin. Needless to say, in all these cases, the fruits were perfectly clean, highly coloured, and very closely graded for size. These points are of much more importance than the choice of package.

In order to secure such results, one must first of all contrive to grow a crop free from scab and other skin blemishes, a matter which has been fairly easy this year, owing to the dry May, but which is very difficult in some seasons. The proportion of rough fruit is small in my crop this year, but what there is is ruthlessly sorted out and sent to a market which can deal with such stuff. Quite small cooking Apples are sold direct to a jam factory. A good many growers now adopt similar or even better methods. If the rank and file were to follow suit, there would probably be much less reason to complain of slow sales and low prices. The public now demand Apples of good quality, and there is practically no demand for inferior samples. There is little to be made of Apples except by growers who manage, by attention to every detail of cultivation, especially spraying and thinning, to produce a crop of high quality, and who follow this by careful grading and packing.

Plum President.

For once in a way, President, the latest variety amongst my Plums, gave quite a good account of itself this season. This variety has previously been very disappointing. It generally blooms profusely, but seldom crops well; and much of the fruit often rots. The Blossom Wilt form of Brown Rot has, I am sure, been the chief reason of the poor set of fruit. Much of the bloom used to wither and turn brown; and the young shoots were also affected, the bark being covered with brown patches. After three successive years of tar-distillate spraying this disease is undoubtedly disappearing. Although President has little flavour to commend it, it is a fine-looking Plum, and is valuable for its lateness, generally realising satisfactory prices. It is a great pity that so few Plums of real dessert quality yield well enough to be worth including in a market plantation, for there is a demand amongst the public for Plums of good flavour which may be eaten raw. Victoria is the only largely-grown Plum which is really fit for dessert; and this is not being planted widely on account of its liability to silver-leaf.

Two Diseases.

Amongst the unwelcome results of the unseasonable weather I ought to have included two diseases, Leaf Scorch and Sooty Blotch. The former is unusually prevalent in my district on Apples and various bush fruits; and I have received specimens from other parts of the country. Although it is often a sign of lack of potash, in this case it is probably due to defective root-action caused by the water-logged state of the soil. The other disease, Sooty Blotch, appears on the fruits of Apples, and is due to the fungus Cleodes pomigena. It does not seem to be very commonly recognised, and is not described in any of the text books I possess, although it has been mentioned in publications of the Ministry of Agriculture. Probably it is not found in all districts; but in mine there is generally a little of it on late Apples. As its name implies, it causes sooty-looking spots on the skin of the fruit; and in serious cases these blotches run together, making the fruit appear very dirty and unattractive. It is fortunately entirely on the surface, and can be wiped off with a damp cloth, except when it appears on a variety with a velvety skin, such as Blenheim Pippin. My worst attack this year was on Lord Derby, and the labour of wiping all the fruits was considerable. In this case the trees had received no fungicide spraying for scab prevention, which, I think, accounted for the serious attack, for none of my sprayed trees are anything like so badly affected. I have seen it stated in American publications, however, that the usual scab spraying is too early for Sooty Blotch, and that an application of fungicide in July is necessary. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 293).

ENGLAND, S.

Berkshire.—The fruits in these gardens are of good quality and the crops in most cases up to average. Our Strawberry crop was quite equal to any I have seen here, and the berries were of good size and excellent flavour. Gooseberries and Currants were exceptionally plentiful. Plums, with the exception of Monarch and Diamond, were good, especially Utility. Damsons were poor, both in crop and quality. Apples promised a very heavy yield, but Beauty of Bath failed. This Apple was severely cut by frost early in May, although the flowers had been over some days previously. We registered 9° of frost on May 1, but except for injuring some of the more forward blossoms, and the Apple mentioned above, it did little harm. *Stanley R. Gammon, Farley Court Gardens, Farley Hill, Reading.*

——The fruit crops are, on the whole, much better than last year. Small fruits yielded well. Some sorts of Apples are plentiful, but certain varieties suffered severely from frost. On April 27 we experienced 7°, on 28 7°, on April 30 8½°, on May 1, 7°, and although Apples were late in flowering the bloom suffered before it was expanded. Pears are a very poor crop, but Raspberries yielded well. All fruit trees look very healthy and clean. *J. Kitt, Wasing Place Gardens, Aldermaston.*

——The severe frosts in April are responsible for a light Apple crop, but the trees are clean; such varieties as Ribston Pippin, American Mother, James Grieve, Ellison's Orange, Beauty of Bath, Sturmer Pippin, Keswick Codlin, Lord Derby, Rev. W. Wilks, Newton Wonder, Bismarck, Bountiful and King Edward are carrying good crops. Strawberries were a failure and I am inclined to think that the inclement weather in late spring was somewhat responsible. Some were planted in frames and some of the same stock was used for forcing and planted outside. Those in the frames and pots gave good crops, whilst those outside of the same stock never grew, but dwindled away. Two fresh plantations were planted this last spring and look like giving good returns next summer. The dry weather of May was not very beneficial to them. All bush fruits cropped well. Our soil is of a light texture and on a subsoil of clay. *A. B. Wadds, Englefield Gardens, Reading.*

Dorsetshire.—The prospects in early spring were very promising, but we had 18° of frost in the late spring followed by drought, which ended in June. Apples flowered well, but the frost destroyed many flowers, the anthers and stigmas being blackened, in some cases in the unexpanded buds. The bulk of the Pear crop was destroyed, only a few fruits maturing on cordon trees on walls. Plums in the open suffered badly, the embryo fruits being blackened and destroyed, but for some obscure reason two or three trees were not affected. Peaches and Nectarines were satisfactory, and, strange to state, these fruits did not suffer from frost, although growing on an east wall, and unprotected. Apricots are never too satisfactory here; the branches die back in spite of every care. Loganberries, Raspberries and Black Currants were thinned by the frost, but a good crop remained, the fruits being the finest I have seen for many years. Red Currants were fine, and I attribute the size of the fruits to a partial thinning of the crop by the frost, whilst the June rains came in time for the final swelling. The frost utterly destroyed the first crop of Strawberry flowers, even in the small bud stage. The plants developed a second crop of trusses which bore well, but the dry period in May and early June made the crop a light one, although the berries were of good quality. Gooseberries, of which we grow quite a number, presented an extraordinary appearance after the severe spring frost. Berry's Early Kent was ready to gather, but 70 per cent. to 80 per cent. of the crop was destroyed, the fruits going quite soft, appearing exactly as if they had been partly boiled. The older portion of the gardens here are situated in a valley, at the base of a watershed, and the soil may be described as a good garden loam. A more recent addition to the gardens is on higher ground, and the soil is a good medium loam overlying chalk. *Henry F. Maidment, The Gardens, Crichel Estate, Wimborne.*

——The fruit crops are a great disappointment; until the last week in April everything was promising a good season, then, on the mornings of the 27th and 28th, we registered 22° and 21° of frost, which not only destroyed all flower that was open but spoiled many that were not expanded. We had a fortnight of north-east winds which finished the work of the frosts. Apples are a very thin crop; Bramley's Seedling and Newton Wonder have quite failed; Warner's King is good, and we have a fair sprinkling of dessert varieties. Raspberries were good but Loganberries were poor and Gooseberries only about half a crop. Currants were satisfactory. The Strawberry crop was the worst I have ever known. Peaches produced a full crop; the trees had plenty of foliage when the frost came, having flowered very early. *W. E. Axford, St. Giles Gardens.*

Hampshire.—The fruit crops generally are very good, though the late spring frosts destroyed the early Strawberries, Pears and certain varieties of Plums. The frosts were followed by cold winds. Scarcely any dews were noticed to assist the growth, which are essential during such dry spells. The rain came late in June and this assisted fruits of all kinds wonderfully, including late Strawberries. Such varieties of Plums as Denniston's Superb, Utility, Laxton's Supreme, Coe's Golden Drop, Prince of Wales, Kirke's, and Merryweather Damson carried very good crops. Apples are very good; Cox's Orange Pippin, Charles Ross, Allington Pippin, Worcester Pearmain, Lady Sudeley, Wealthy, Ben's Red, Beauty of Bath, Bramley's Seedling, Norfolk Beauty, Grenadier, Warner's King, Lane's Prince Albert, Mère de Ménage and Lord Grosvenor are all heavily cropped. Raspberries gave a bountiful crop of very fine fruits, including Lloyd George, Park Lane, The Devon and Pine's Royal. Black, Red and White Currants had fine, clean crops. The soil is a heavy loam resting on a stony, yellow clay. *George Ellwood, Swanmore Park Gardens, Swanmore.*

——The fruit crops generally are fairly good. Apples are exceptionally plentiful, and we had to thin the fruits; the trees are very clean and healthy. Pears and Plums are very patchy; in some gardens in this district there are good crops of these fruits, in other places they are failures. Small fruits, such as Gooseberries, Raspberries, Loganberries and Black Currants were satisfactory, but Red and White Currants were not so good. The yield of Strawberries was poor; all the early flowers were cut off by frost, and afterwards dry weather set in, so that the late flowers were ruined; in fact, it was the worst crop for years. The soil is a medium loam on limestone. *George Summersell, Buriton House Gardens, Petersfield.*

——The fruit crops are very satisfactory; Apples in particular are a heavy crop and practically all sorts are yielding well. Trees of Bramley's Seedling, which suffered injury from frost in many districts, are simply laden here, and all fruit trees are wonderfully clean. Pears and Plums are average crops. The Strawberry was the only fruit which suffered to any considerable extent from the late frosts, yet we had a fair yield, although continuous wet weather spoilt many of the berries. All small fruits were plentiful and of excellent quality. *A. J. Legge, Dogmersfield Park Gardens, Winchfield, Basingstoke.*

——There was every prospect of bounteous fruit crops in spring, following the beneficial effects of last autumn's summer-like weather in ripening the wood and fruit spurs, perfect ripening of the growth being evident in the spring by the large quantity of blossom on most fruit trees. As sometimes happens after a mild winter, late frosts occurred, 14° being registered on April 28, the lowest temperature since the closing days of October; we had 9° on April 29, 8° on the 30th, and 10° on May 1, following a burst of summer weather earlier in the month which had hastened the development of all growth. These frosts caused irreparable damage to the young growths of shrubs and flowers. The stigmas, pistils and anthers were damaged in the undeveloped blooms. These gardens are somewhat exposed, on a chalk formation in a low-lying position, with the River Test flowing through them, and are not first-rate for fruit growing. Other gardens in the district, especially those less exposed to the north and east, and those near to the New Forest, report a better yield than ours. *Frederick Gooch, Bossington House Gardens, Houghton, Stockbridge.*

——The fruit crops generally are light. The trees blossomed well, but sharp frosts on the nights of May 25, 26 and 27 did severe damage. Of small fruits, Raspberries were an exceptionally good crop. Strawberries were not plentiful, but the berries were of good size and flavour. Gooseberries were a good crop and the berries of very large size. Red and Black Currants were poor crops, but Cherries were an average yield, both the sweet and Morello kinds. Plums also were a light crop. Pears seemed to set well, but owing to the frosts most of the fruits dropped from the trees. Apples are about an average crop, our best varieties being Cox's Orange Pippin, Lane's Prince Albert, Worcester Pearmain, Galloway Pippin, Keswick Codlin, Lord Suffield and Easter Pippin. *William G. Osborne, Sutton Manor Gardens, Sutton Scotney.*

Kent.—Owing to the uneven effect of the serious spring frosts, this report applies only to my own crops. The wet June and July has left a sad harvest of scab on hard fruits, and a great part of the mid-season and late Cherry crops were ruined and abandoned. Small fruits, however, rejoiced in the abundant moisture, and Raspberries and Gooseberries have been unusually good. *Edward A. Bunyard, Allington, Maidstone.*

——Taking my orchard of about five acres for the basis of my report, the following relates to the Apple crop. Dumelow's Seedling (Wellington), one-third of a good crop (28 trees); Lane's Prince Albert, two-thirds (28 trees); Cox's Orange Pippin, one-third (about 30 trees); Warner's King, two-thirds (28 trees); Peasgood's Nonesuch, one-third (25 trees). I note a large trade grower within half-a-mile from here, on his whole plantation, a very large one, has not a bushel of Apples of this last variety. Beauty of Kent, two-thirds (about 30 trees);

Baumann's Red Winter Reinette (25 trees), a very small crop; James' Grieve, one-third crop; Gascoyne's Scarlet, half-a-crop (75 trees); (contrary to usual results, the crops show that there are more fruits on the Crab stock than on the Paradise stock); Blenheim Pippin, two-thirds of a crop (7 trees); Annie Elizabeth, full crop (one tree); Lord Suffield, two-thirds of an average yield; and Ribston Pippin, two-thirds. *Charles E. Shea, The Elms, Foots Cray, Kent.*

(*To be continued*).

A COLOUR CORRELATION IN THE POTATO.

Several colour connections in the Potato have been already recorded. In 1922 the writer[*] reported that pigment in the placentas of the ovary and fruit was always associated with coloured tubers; Salaman[†] has enumerated several correlations, the most complete of which are those between colour in the anther and colour in the tuber; Snell[‡] was the first to draw attention to the connection between flower and sprout colours; and it is a matter of common knowledge that sprout colour is associated with any colour which may appear on the tuber or stolon. The present article deals with a correlation which exists between flower colour and the location of pigment in the tuber.

It has been known for some time that coloured varieties of Potatos differ in respect of the tissues in which most colouring matter is found in the tubers; in some it appears to be entirely in the cortex and in others mainly in the cork cells. The colouring is due to a pigment dissolved in the cell sap and it may be found in the cortex, secondary cortex and cork. In some varieties, however, the cork cambium appears unable to give rise to pigmented cork cells. The importance of the above, especially from a genetic standpoint, has been stressed by Krantz[§] and, in order to accumulate data concerning British varieties, an examination of all common commercial Potatos and many seedlings was made during August and September of the present year. Determinations were made with the aid of a microscope, but it may be stated that, with immature tubers at least, the location of the pigment may be ascertained with the naked eye.

According to the information obtained, coloured tubers may be arranged in the following groups: (*A*) Colour entirely in the cortex; (*B*) Colour in both cortex and cork; and (*C*) Colour mainly in cork, but a little appearing in the cortex in the neighbourhood of the eyes and lenticels. Although the colour may be only faint it has been found in all varieties examined in the secondary cortex in the neighbourhood of the eyes and lenticels. The majority of whole-coloured varieties belong to group *A*, and parti-coloured varieties to group *C*, but there are exceptions, and these are of importance from the systematic point of view.

It was considered likely that where colour appeared in the cork of the tuber it might also be found in the absciss layer at the junction of the pedicel and peduncle. In most varieties a slight colouring is to be found in this tissue. Unfortunately, owing to the incidence of Blight, complete observations could not be made, but of all the varieties available for inspection the following were outstanding because of coloured absciss layers, viz., Rector, Lord Tennyson, The Dean (A. Dean), Adirondack, Beauty of Bute and Buchan Beauty. It is noteworthy that all these varieties have colour in the tuber cork cells.

It was next sought to correlate, if possible, flower colour with tuber colour, and it was found that, without exception, in the eighty-nine varieties examined, whenever colour appeared in the cork cells of the tuber the flower, when it existed, was coloured. Indeed, the flower colours of a number of seedlings were predicted before they were known. The actual colour, of course, corresponds to the tuber colour red-purple or blue-purple, according as the tuber colour is red or purple. When colour is absent from the cork cells there is, so far, no certain means of predicting whether the flower will be coloured or white; many white-skinned varieties and many which have colour in the cortex only, have coloured flowers.

Summary.

(1) Pigment in whole-coloured and parti-coloured tubers may be located in the cortex alone or in the cortex and cork in varying proportions.

(2) A highly pigmented absciss layer at the junction of the pedicel and peduncle appears to be associated with colour in the tuber cork.

(3) Pigment in the tuber cork appears to be definitely correlated with coloured flowers. *T. P. McIntosh.*

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[*] *Replies to the Potato Questionnaire*, 1922; Board of Agriculture for Scotland.

[†] *Potato Varieties*; R. N. Salaman, 1926.

[‡] *Kartoffelsorten*; K. Snell, 1922.

[§] *Genetic Studies in Potatoes*; F. A. Krantz, in *Report of the Potato Association of America*, 1926.

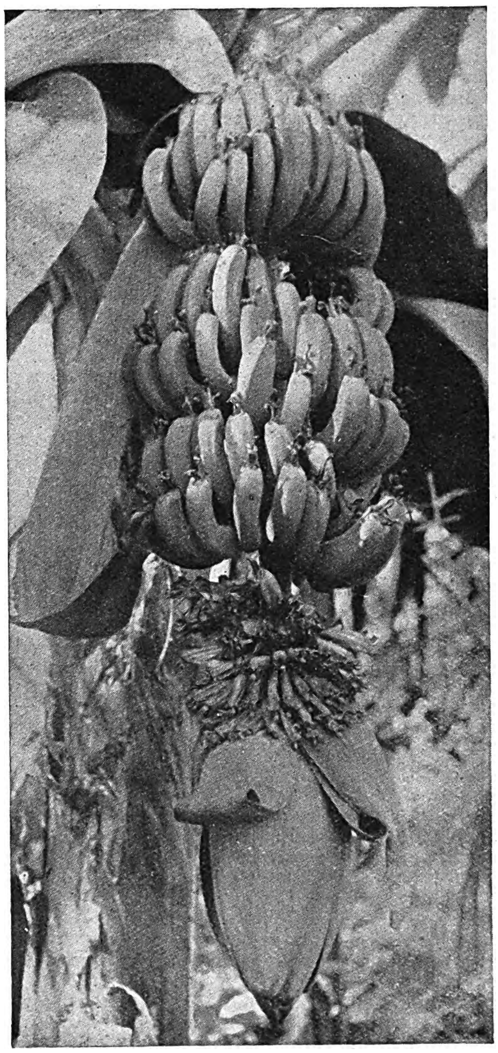


FIG. 140.—BANANA IN FRUIT AT LAYTON MANOR, WEST LAYTON, RICHMOND, YORKS.

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Musa Cavendishii.—I enclose a photograph of a fruiting specimen of Musa Cavendishii (see Fig. 140). The bunch carried about one-hundred-and-fifty "fingers," two of which I send for you to taste. The specimen photographed is growing in the gardens of H. C. Embleton, Esq., Layton Manor, West Layton, Richmond, Yorkshire. Although so far north, we have been very successful with Bananas, and the flavour of the fruits produced is very much finer than that of imported Bananas. *R. Cooper, Layton Manor Gardens.*

[The fruits were of good size and excellent flavour.—Eds.]

Foxgloves and Verbascums.—Some three years ago, a few white Foxglove plants appeared here after some considerable clearing up, and alongside grew a tiny specimen of Verbascum. This Verbascum plant was very late and fragile, and in late October produced a few blooms. Later, I secured a pinch of seed, but when spring came I had lost or mislaid it. In the next year a considerable number of white Foxgloves appeared, but no Verbascum. I saved a larger quantity of the seeds of white Foxglove, and in the spring before last I sowed them. Instead of white Foxgloves, I had a crop of Verbascum plants, about one hundred or so, but there was no white Foxglove on the plot where I sowed the bulk of the seeds. A pinch of the seeds sown by me as a precaution in a shallow box produced plants (considerably retarded) which are evidently Foxgloves. Although the statement may seem somewhat incredible, I think it deserves to be reported. *Edward O'Brien, M.A., Falmore House, Moville, Derry.*

A Tall Foxglove.—I have a Digitalis, still in flower at the top, over ten feet high. Is this a record? *R. Westmore, Rockwood Gardens, Watford.*

The Effect of Creosote on Seedlings.—In the recent interesting article on the Selective Action of Tetrachlorethane on Plants (*Gard. Chron.*, September 17, p. 232) the contributor mentions, among other vapours, that of cresol as generally damaging to vegetation. An unsought experience I had here last spring suggests some selective action on the part of this substance. Late last winter, a row of brick hot-beds had its wooden framework renewed. In early March it is customary here to raise the Tomato plants required in one of these hot-beds. This year, as usual, they germinated quite readily, but soon showed signs of distress. Such behaviour was puzzling for a time, until I learned on enquiry that the joiners, in fixing the framework, had treated its underside with solignum, which, I imagine, is a proprietary preparation of creosote. It then became interesting to observe how various seedlings would fare in these frames. The Tomatos declined to thrive at all, and to preserve them they had to be moved to a cold greenhouse, as there is no heated glass structure here, thus delaying their fruiting by a fortnight. Mustard, Cress, Radishes and early Turnips were badly affected. Globe Beet and French Carrots were unharmed, and gave good crops in the frames. Celery and Celeriac were raised without difficulty. Lettuces appeared to be immune, and Vegetable Marrows and Pumpkins flourished. Seedling Asters, Dahlias and Ageratum were unaffected. It is to be noted that the behaviour towards the fumes is apparently a family one. For instance, the Crucifers were sufferers, but the Umbellifers and Composites were resistant. The writer does not wish to stress unduly these observations. They were merely casual and not carried out as a scientific experiment. The different seeds were not all sown at the same time, and some of the seedlings, owing to their position in the frames, may have been less subjected to the fumes than others. That there was some selective action, however, can hardly be doubted. The sensitiveness of the Tomato seedlings was remarkable. A second batch, sown two or three weeks later, were likewise affected. On the other hand, the Carrots, for example, growing in proximity to the Tomatos, behaved quite normally and suffered no check. It was noted in the case of the Tomato seedlings that the cotyledons became swollen and glazed, then they slowly browned, eventually shrivelling from the tip downwards. The first foliage leaves were stunted in size and also, sooner or later, began to brown and wither similarly. A peculiar feature noticed when potting the seedlings was the brittle nature of the cotyledons and first leaves; it was difficult to avoid breaking them. The Tomatos, I may state, recovered perfectly when removed in time from the frames, and have given a good crop of fruits. *J. Parkin, Blaithwaite, Carlisle.*

SOCIETIES.

ROYAL HORTICULTURAL

Fruit Show.

October 11.—In the opinion of all who attended it, the great Fruit Show held at Vincent Square on this date was a very fine one. Entries were numerous and the competition was keen throughout almost all the one-hundred-and-fourteen classes, and the quality of the fruits exhibited was of a very high average. In size and colour the Apples were especially fine, while Grapes were, on the whole, of better quality than usual. In the Grape classes and the dessert fruit classes competition was excellent. The commercial fruit classes attracted considerable attention, and the trade displays, though necessarily limited in extent, added to the interest and appearance of the show. The hall and annexe were so well filled with fruit exhibits that there was no room for displays of flowers and plants.

Several plants were brought up for consideration by the Floral and Orchid Committees, which, however, did not meet; members were present as they had received no notice to the effect that their attendance would not be required on this occasion.

Grapes.

There were three collections of twelve bunches of Grapes, wherein four varieties (one of which must be white), three bunches of each, were required. The first prize, a Silver Hogg Medal and £15, was won by the Duke of Newcastle (gr. Mr. S. Barker), Clumber, Worksop, with a handsome set that consisted of three very big bunches of Gros Guillaume, three finely-berried and well-finished clusters of Gros Colman, three beautifully coloured bunches of Muscat of Alexandria and three of Mrs. Pearson. In pointing, the judges were instructed to regard each three bunches as "a dish," and they awarded 9½, 8½, 8 and 9 points, respectively, or a total of 35 points out of a possible 43. Second prize was awarded to Mrs. T. S. Hall (gr. Mr. G. Richardson), Cricket St. Thomas, Chard, for an even set of Muscat of Alexandria, Madresfield Court, Black Hamburgh and Alicante, the pointing being 8, 7, 7 and 7, respectively, or 29 out of a possible 43. Third prize was won by G. Mayer, Esq. (gr. Mr. R. Cottam), Wistler's Wood, Woldingham, with Prince of Wales, Lady Downes, Alicante and Muscat of Alexandria to which 7, 6, 6 and 6 points were awarded respectively, or 25 points out of a possible 43.

For four bunches of Grapes, two bunches each of a white and a black variety, Lord Swaythling (gr. Mr. F. J. Rose), Townhill Park, Bitterne, Southampton, easily won the premier award among seven competitors. He showed splendid, large and shapely bunches of Muscat of Alexandria and Mrs. Pince, gaining 10 out of 12 points, and 9 out of 11 points, respectively; total, 19 out of 23; second prize, Lady Durning Lawrence (gr. Mr. J. Rutherford), King's Ride, Ascot, for superbly berried bunches of Muscat of Alexandria, 11 points, and Alicante, 7 points; total, 18 out of 22; third, Captain R. B. Brassey (gr. Mr. J. G. Quinn), Cottesbrooke Hall, Northampton, with Muscat of Alexandria, 8, and Madresfield Court, 8; total, 16 points out of 23.

In the other Grape classes, two bunches of specified varieties were required. In the Lady Downes class, Mrs. T. S. Hall led, followed in order by G. Mayer, Esq., and Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames; five entries.

Five competed in the class for a pair of bunches of Mrs. Pince, and here Lord Swaythling led with heavy, well-finished clusters, followed by Captain M. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton; no third prize was awarded.

The Hon. Mrs. Tufton (gr. Mr. H. H. Brown), Castle Hill, Englefield Green, had the best pair of bunches of Alicante and they were particularly good ones, both in size and berry; second, Sir Hugo Cunliffe-Owen (gr. Mr. F. Tester), Weir Bank, Bray, Berkshire; third, Captain R. B. Brassey; eight entries.

Captain Brassey led in the class for Madresfield Court with heavy bunches; second, the Duke of Newcastle; only two entries. The best pair of bunches of Appley Towers was shown by Lady Juliet Duff (gr. Mr. H. Weaver), Coombe Court, Kingston Hill, and though there were heavier bunches, these were the best finished of the four sets; second, Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield; third, Mrs. T. S. Hall.

In the class for any other black Grape, the Duke of Newcastle won first prize with Black Hamburgh; second, Mrs. T. S. Hall, with the same variety; third, Lord Swaythling, with Gros Colman, fine in bunch and berry but rather red in colour.

The class for two bunches of Muscat of Alexandria proved an attractive one as there were thirteen competitors. Large-berried, amber-coloured clusters won first prize for Lady Durning Lawrence; second, Mrs. Hornby-Lewis (gr. Mr. A. E. Friend), Danesfield Park, Marlow; third, the Duke of Newcastle, Clumber.

In the "any other white" class, Lord Swaythling led with big bunches of Mrs. Pearson; second, Captain Brassey, with Golden Queen; third, the Duke of Newcastle, with Mrs. Pearson; eight entries.

Collections of Dessert Fruit.

The best collection of nine dishes of ripe dessert fruits, not fewer than six kinds, came from the Duke of Newcastle, who showed Muscat of Alexandria and Gros Colman Grapes; Hero of Lockinge Melon; Doyenné du Comice and Pitmaston Duchess Pears; Golden Eagle and Princess of Wales Peaches; and Cox's Orange Pippin and Ribston Pippin Apples; total, 67½ points; second prize was awarded to Captain M. Drummond, whose very showy collection consisted of heavy bunches of Muscat of Alexandria and Alicante Grapes; Superlative Melon; Salway Peaches; Beurré Superfin (over-ripe) and Louise Bonne of Jersey Pears; Coe's Golden Drop Plums; and Cox's Orange Pippin and James Grieve Apples; 64½ points; third, Sir Charles Nall-Cain, 63 points.

In the smaller class for six dishes of four kinds of ripe dessert fruit, Lady Juliet Duff secured the first prize with good bunches of Muscat of Alexandria and Appley Towers Grapes; Prince of Wales Peaches; Triomphe de Vienne Pears; Hero of Lockinge Melon; and Worcester Pearmain Apples; 40½ points; second, Mrs. T. S. Hall, who had Muscat of Alexandria and Prince of Wales Grapes; Superlative Melon; Doyenné du Comice Pears; and Cox's Orange Pippin and Ribston Pippin Apples; 39½ points; third, Mrs. Hornby Lewis, 35 points. There were five entries in this class.

Collections of Hardy Fruits.

In the class for a collection of thirty dishes of hardy fruits grown in the open air and arranged on a space twelve feet by three feet, the first prize was won by Captain M. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton, who exhibited very fine examples of Stirling Castle, Herring's Pippin, Peasgood's Nonesuch, Mère de Ménage, Warner's King, Ellison's Orange, Charles Ross and Lane's Prince Albert Apples; Triomphe de Vienne, Doyenné du Comice, Conference, St. Luke, Beurré Alexandra Lucas and Charles Ernest Pears; White Marseilles Figs, Salway Peaches, Morello Cherries and Coe's Violet, Wyedale, President and Coe's Golden Drop Plums; second, Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brockets Hall, Hatfield, who had very fine dishes of Peagood's Nonesuch, Charles Eyre and Annie Elizabeth Apples; Pitmaston Duchess, Durondeau and Magnate Pears; Nectarine Peach, Coe's Golden Drop, Archduke, The President and Prince Engelbert Plums.

The best collection of twelve dishes of hardy fruits grown in the open air was shown by Col. F. J. D. Wingfield Digby (gr. Mr. E. Hill), Sherborne Castle, Dorset, who had a very excellent exhibit of highly-coloured fruits of Peasgood's Nonesuch, Cox's Orange Pippin, Rev. W. Wilks, Allington Pippin and Herring's Pippin Apples; Doyenné du Comice, Marguerite Marillat, Pitmaston Duchess and Beurre Hardy Pears, and Coe's Golden Drop, President and Rivers' Late Orange Plums; total points, 55½; second, F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, with 53 points; third, J. H. Loudon, Esq. (gr. Mr. J. Bond), Olantigh, Wye, Kent. There were six exhibitors in this class.

Commercial Fruit Classes.

Ten classes were arranged for competition amongst market growers. Combinations of individuals or firms were not allowed, nor could the fruit shown be the produce of different districts. The object of these classes was to illustrate the most suitable types of fruit and methods of packing. As the exhibits were sent direct by the grower to the show and opened by officials of the Society, it was a real test of method. In nearly all the classes the grading and packing were admirable, and it was very rare that an Apple showed any sign of being bruised. The quality of the fruit also reached a high standard of excellence, and most of the fruits which normally have coloured skins were of really brilliant appearance. There was no exhibit in the class requiring four British Standard boxes of Cox's Orange Pippin Apples, but the competition was very good in the other Apple and in the Pear classes.

The seven exhibits of four boxes of any dessert variety other than Cox's Orange were all filled with Apples of brilliant colour. One was a trifle over-filled, while a second erred in the opposite direction. The first prize was awarded to Mr. Glover Long, Dairy Farm, Lower Higham, Rochester, for boxes of admirable Allington Pippin. The Apples were of very even quality and of splendid appearance. For packing, this exhibit received 38½ points out of a possible 40. The maximum was given for edible quality and for size, while for maturity, freedom from diseases and pests, and freedom from bruises and other damage only a quarter-of-a-point in each quality was lost. The second prize was awarded to the University of Reading for most brilliantly coloured fruits of Worcester Pearmain. This exhibit was only a quarter-of-a-point behind the leader. The fruit itself was slightly superior, but the packing was one point behind.

There were eight exhibits of Bramley's Seedling, and the first prize was awarded to Mr. H. G. Kleinwort, Wierton Place, Monchelsea, Maidstone, for four boxes of Apples of even quality and good colour, though the boxes were a trifle over-filled, and an occasional fruit showed a slight bruise. For packing, this exhibit received 38 points from a maximum of 40, while the fruit itself was pointed at 57½ from a maximum of 60. The second prize was awarded to the University of Reading for well packed boxes of Apples of beautiful colour and even size.

Lord Derby, shown by the Hollesley Bay Labour Colony, Suffolk, with 39 points for packing and 58¾ points for fruit, was first in the class for four boxes of any cooking Apple other than Bramley's Seedling. The University of Reading showed highly coloured fruits of Newton Wonder and was again a close second.

The classes for three one-layer boxes of Apples were very popular with both the growers and the visitors. In the class for Cox's Orange Pippin the first prize was awarded to Mr. H. T. Mason, Hampton Hill, for even fruits which possessed the golden tinge which tells of good flavour, though they were just a trifle large. But 59½ points from a maximum of 60 were awarded for the fruits, and 23½ from a maximum of 25 points were given for packing. Mr. M. C. Evans, Hatfield Peverel, was a good second in this large class. Charles Ross, of delicately beautiful colour, shown by the Executors of Mr. W. E. Bear, Magham Down, Hailsham, was the best dessert variety other than Cox's Orange, and Worcester Pearmain, of very high colour, shown by the University of Reading, was second. The judges did not state the number of points in this class.

Pears, shown in three one-layer boxes, were of irregular quality, but the best were very good indeed. The boxes of Conference, which won the first prize for the Hollesley Bay Labour Colony, were of very high quality, while Lt.-Col.

Lumley Webb, Ham Green, Upchurch, was second. There were four exhibits of Doyenné du Comice, and here a Special Prize was awarded to Mr. J. Mitchell, Longuevill, St. Saviours, Jersey, for magnificent fruits, which were sent in boxes "not of the required dimensions." The second prize was awarded to Mr. C. H. H. Weekes, Dukes Bradnich, for smaller Pears of even size.

In the two classes for four 12 lb. chip baskets of any black and any white Grapes, only Messrs. J. Almond and Son sent exhibits. They were awarded the first prize for splendid bunches of black Grapes, and the second prize for shapely bunches of Muscat of Alexandria Grapes which, unfortunately, were not quite ripe.

Amateurs' Classes.

Ten classes were provided for exhibits of Apples, Pears, Plums, Damsons and Autumn Raspberries grown by amateurs. Nearly all the Apples were of exceptional quality and the competition was very keen, but Pears were not so freely shown. There were many exhibits of sixteen dishes of culinary, and eight dishes of dessert Apples, and the best collection was shown by Captain M. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton, whose cooking varieties included excellent dishes of Rev. W. Wilks, Peasgood's Nonesuch and Bramley's Seedling, and he had splendid dishes of Ellison's Orange, Rival, Sir John Thornycroft and James Grieve amongst the dessert varieties. Col. Wingfield Digby (gr. Mr. E. Hill), Sherborne Castle, Dorset, was second, and he had brilliantly coloured fruits of Charles Ross, King of the Pippins, Cox's Orange and Baron Wolseley.

The many exhibits of eighteen dishes of culinary and four dishes of dessert Apples were of exceptionally high quality. The first prize was won by J. A. Stidston, Esq., Bishopsteignton, Devon, who included in Masterpiece and Crimson Peasgood's two new Apples of beautiful appearance. He also showed Sir John Thornycroft, Emperor Alexander, Baron Wolseley and Crimson Bramley, of very high quality. J. H. Loudon, Esq. (gr. Mr. J. Bond), Olantigh, Wye, was a good second, and he showed James Grieve, Rev. W. Wilks and Peasgood's Nonesuch of fine quality.

Of the seven exhibits of six dishes of cooking Apples, the best was shown by Capt. Drummond, who had exceptionally good specimens of Bismarck, Warner's King and Stirling Castle. In his second prize exhibit, A. James, Esq., Bishopsteignton, Devon, included Rev. W. Wilks of beautiful golden colouring.

Mrs. Helsham Jones (gr. Mr. F. Lock), Tile Barn, Newbury, won the first prize for nine admirable dishes of dessert Pears, which included Durondeau, Marguerite Marillat and Pitmaston Duchess of splendid appearance. J. A. Stidston, Esq., was second and he included Doyenné Bussoch and Durondeau of fine colour.

The best three dishes of Plums were shown by Lady Mary Morrison (gr. Mr. W. H. Mills), Tisbury, Wilts., who had excellent dishes of Late Orange, President and Coe's Golden Drop. Captain Drummond was second, and his best dish was of Coe's Golden Drop. Sir Charles Nall-Cain, Bt. (gr. Mr. T. Pateman), Brocket Hall, Hatfield, was easily first with three dishes of Damsons or Bullaces. His varieties were Merryweather, Farleigh Prolific and Bradley's King. R. H. Ling, Esq. (gr. Mr. D. W. Bedford), The Braes, Berkhamsted, was second. The Hailsham Berry, shown by Mrs. Hornby Lewis (gr. Mr. A. E. Friend), Danesfield Park, Marlow, was first in the class for a dish of autumn Raspberries, and Queen Alexandra, shown by Col. R. G. Howard Vyse (gr. Mr. F. S. Booke), Stoke Place, Slough, was second.

District County Classes.

In most of the classes arranged for competition amongst amateurs in the various county districts the competition was good and the fruits of high quality, but there was no exhibit from the Channel Islands. In each district there were two classes, one requiring four dishes of culinary and two of dessert Apples, and the other for six dishes of dessert Pears.

Many amateurs competed in the Kent, Surrey, Sussex and Hants. section. The best Apples were shown by W. H. Myers, Esq. (gr. Mr. G. Ellwood), Swanmore House, Hants., who showed excellent dishes of The Queen, Cox's Orange and Ribston Pippin. Mrs. Winterbotham (gr. Mr. G. Brown), Oakley Place, East Grinstead, was first with Pears, and the best dishes were of Beurré Superfin, Doyenné Bussoch and Beurré Diel.

Three exhibits of Apples were staged from the Western Counties, and the first five dishes of J. A. Stidston, Esq., Devon, were excellent; Cox's Orange, Blenheim Pippin, Emperor Alexander and Queen were splendidly coloured. Lady Mary Morrison, who was first for Pears, was second. The dishes of Pears included excellent Conference, Doyenné du Comice and Marguerite Marillat.

In the Oxford, Bucks., Berks., Beds., Herts. and Middlesex class, the best of eight exhibits of Apples was shown by S. Gardner, Esq. (gr. Mr. G. Sturt), Oakhurst, Harrow-on-the-Hill, who showed good dishes of Fearn's Pippin, Cox's Orange and Bismarck. Mrs. Austin (gr. Mr. E. G. Longhurst), Ellern Mede, Totteridge, was a good second. Six exhibits of Pears were staged. The Rev. Roland Smith (gr. Mr. H. Bates), Hertingfordbury Park, Hertford, was first, and he had good dishes of Louise Bonne of Jersey, Durondeau and Pitmaston Duchess.

The best of the five collections of Apples in the Essex, Suffolk, Norfolk, Cambridge, Hunts. and Rutland class was shown by Lt.-Col. Hilder, J.P. (gr. Mr. J. R. Smith), Huskards, Ingatestone, Essex, who staged Ribston Pippin, Cox's Orange Pippin and Peasgood's Nonesuch, of good appearance. H. G. Bois, Esq. (gr. Mr. A. E. Moss), Billesley Manor, Alcester, was second with fruits of good colour. Lord Suffield (gr. Mr. A. J. Jones), Gunton Park, Norfolk, had the best Pears, and showed fine dishes of Marguerite Marillat, Triomphe de Vienne and Beurré Bussoch.

Only two sets of Apples were shown from Lincoln, Northampton, Warwick, Leicester, Notts., Derby, Staffs, Shropshire and Cheshire. The first prize was won by W. Frith, Esq. (gr. Mr. R. W. Thatcher), Carlton Park, Market Harborough, whose fruits of Emperor Alexander, Wealthy and James Grieve were of handsome appearance. Only the second prize was awarded for Pears which were shown by the Rev. H. M. Burden (gr. Mr. W. Parks), Whittington Hall, Chesterfield.

The Earl of Coventry (gr. Mr. W. H. Wilson), Croome Court, Worcester, won both first prizes in the Gloucester, Worcester, Hereford and Monmouth class. His best Apples were Prince's Pippin, Cox's Orange Pippin and Warner's King, and he had good dishes of Beurré Hardy and Beurré Bachelier Pears.

Lady Knott (gr. Mr. W. E. Anderson), Close House, Wylam-on-Tyne, was the only exhibitor in the Northern Counties class, and was awarded both first prizes for very good dishes. The Apples included Charles Ross and Mabbott's Pearmain, while Marguerite Marillat, Beurré d'Anjou and Pitmaston Duchess Pears were very handsome.

F. J. Corbett, Esq. (gr. Mr. J. Jones), Yns-y-Maengwyn, Merioneth, the only exhibitor for Wales, was awarded both first prizes. Amongst his Apples the varieties Peacemaker, Cox's Orange Pippin, Charles Ross and Emperor Alexander were excellent, as also were the Pears Durondeau, Conference and Pitmaston Duchess.

Of the Scottish exhibits of Apples, the best were from Major C. L. Gordon (gr. Mr. J. Duff), Threave House, Castle Douglas, who showed highly coloured fruits of Wealthy, Cutler Grieve and Worcester Pearmain. There were no Pears.

The Earl of Bessborough (gr. Mr. T. E. Tomalin), Piltown, Co. Kilkenny, had splendid dishes of Apples in the Irish class, and his first prize exhibit included Rival, Cox's Orange, Loddington and Lane's Prince Albert. The Earl of Dunraven (gr. Mr. E. S. Goff), Castletown, Carrick-on-Suir, was second, and he had highly coloured dishes of Worcester Pearmain, Charles Ross and Baron Wolseley. The prizes for Pears were won by the same exhibitors in the same order. The Earl of Bessborough had handsome dishes of Triomphe de Vienne, Conference and Doyenné Bussoch, and the second prize collection included Grosse Calebasse of good appearance

Single Dish Classes: Apples.

Competition in these classes was keen throughout and the quality of the fruits was very good. J. A. Stidston, Esq., Bishopsteignton, Teignmouth, was the most successful competitor and gained first prizes in the classes for Adams's Pearmain, American Mother, Blenheim Pippin, Duke of Devonshire, Egremont Russet, Ellison's Orange, King's Acre Pippin, Rival, William Crump, Bismarck and Stirling Castle.

The best dishes of Charles Ross, Cox's Orange Pippin, large fruits of Blenheim Pippin, Lane's Prince Albert, Newton Wonder, Norfolk Beauty and The Queen were staged by W. H. Myers, Esq. (gr. Mr. G. Ellwood), Swanmore House, Swanmore. Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, won first prize for Allington Pippin, and he was equally successful for a dish of Edward VII and for a dish of eight fruits of a variety not included in the schedule, with Charles Eyre.

The best dish of Claygate Pearmain was staged by Col. F. J. B. Wingfield Digby (gr. Mr. E. Hill), Sherborne Castle, Dorset, who was also placed first for S. T. Wright.

Mrs. R. Lukin, Brookfield House, Burghfield Common had the best dishes of Gascoyne's Scarlet, James Grieve and Peasgood's Nonesuch; while H. W. Henderson, Esq. (gr. Mr. F. L. Pike), West Woodhay, Newbury, gained premier honours for Superb and Orleans Reinette. Captain M. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton, won first prizes for Ribston Pippin and Dumelow's Seedling, and F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, had the best dish of St. Cecilia. The first prize dish of Sturmer Pippin was shown by W. J. H. Whittall, Esq. (gr. Mr. J. M. Grant), Grayswood Hill, Haslemere, who also had the best set of Golden Spire.

In the class for one dish of eight fruits of any early variety not named in the schedule, and fit for use, C. Butt, Esq., Northbrook, High Park, Ryde, Isle of Wight, was successful with the variety Coronation, and this competitor was also placed first for a dish of eight fruits of any late variety not named in the schedule, with King of Tompkin's County.

The best dish of Annie Elizabeth was shown by the Trustees of the late Sir Charles Henry (gr. Mr. W. E. Hewitt), Parkwood, Henley-on-Thames; while Mr. A. C. Barnett, Moor Common, Lane End, Bucks., was first for Bramley's Seedling.

Sir Charles Nall-Cain (gr. Mr. T. Pateman), had the best dishes of Crawley Beauty and Lord Derby, and A. H. Pullin, Esq., Hawthorne Road, Wallington, was placed first for Ecklinville. The prize-winning dish of Encore was exhibited by H. J. Evans, Esq., Taormina, Burdon Lane, Cheam; Mrs. Denniston (gr. Mr. Norris), Highdown, Compton, Winchester, had the best dish of Golden Noble; Lady Mary Morrison (gr. Mr. H. H. Mills), Tisbury, Wilts., the best dish of Grenadier; Mrs. Hornby Lewis (gr. Mr. A. E. Friend), Danesfield Park, Marlow, Bucks., the best dish of Rev. W. Wilks; and G. E. Danks, Esq., Rotherfield Road, Carshalton, the best dish of Warner's King.

The prize winning dish of eight fruits of the best flavoured Apple not mentioned in the single dish classes was won by the Earl of Bessborough (gr. Mr. T. E. Tomalin), Emsworth, Hants., with St. Edmund's Pippin.

Single Dish Classes: Pears.

Captain Drummond was very successful in the Pear classes, and gained premier honours for dishes of Beurré d'Anjou, Pitmaston Duchess, Glou Morceau and Louise Bonne of Jersey; while Mrs. Austin (gr. Mr. E. G. Longhurst), Ellern Mede, Totteridge, Herts., was first for Beurré Bosc, and for a dish of eight fruits of any early sort not named in the schedule, with Souvenir du Congres. The dish of Beurré Hardy shown by Lady Mary Morrison was placed first, while Col. R. G. Howard Vyse (gr. Mr. F. S. Booke), Stoke Place, Slough, had the best Beurré Superfin; and Mrs. Hornby

Lewis the premier dish of Comte de Lamy, only two competing in this class.

J. A. Stidston, Esq., exhibited the first prize fruits of Conference and Thompson's; Lord Suffield (gr. Mr. A. J. Jones), Gunton Park, Norwich, the best dishes of Doyenné de Comice and Marguerite Marillat; Miss J. Phillips, Abbotskerswell, Newton Abbot, the finest examples of Durondeau; and Rev. Roland Smith (gr. Mr. H. Bates), Hertingfordbury Park, Hertford, the premier dish of Emile d'Heyst. There were only two exhibitors in the class for a dish of Fondante d'Automne, and no first prize was awarded, Mrs. Helsham Jones (gr. Mr. F. Lock), Tile-Barn, Woolton Hill, Newbury, being placed second.

For a dish of Josephine de Malines, the Earl of Bessborough was placed first, and Captain R. B. Brassey (gr. Mr. J. G. Quinn), Cottesbrooke Hall, Northampton, had the best dish of Marie Louise. The Duke of Newcastle (gr. Mr. S. Barker), Clumber, Worksop, excelled for Pitmaston Duchess, and also gained first place for a dish of eight fruits of any late variety not named in the schedule, with Charles Ernest. The best-flavoured Pear, not named in the above classes, was Seckle, shown by Col. R. G. Howard Vyse.

Fruit Committee.

Present: Mr. G. E. A. Nix (in the chair), Mr. J. Cheal, Mr. A. H. Pearson, Mr. P. C. M. Veitch, Mr. G. F. Tinley, Mr. H. S. Rivers, Mr. W. H. Divers, Mr. W. F. Giles, Mr. T. Pateman, Mr. A. Bullock, Mr. H. Markham, Mr. J. G. Weston, Mr. H. Prince, Mr. E. Neal, Mr. A. W. Metcalfe, Mr. F. Jordan, Mr. A. C. Smith, Mr. P. A. Tuckett, Mr. J. Harrison, Mr. G. Woodward, Mr. John Basham, Mr. E. A. Laxton and Mr. A. Rawes (Secretary).

No awards were made, but a host of fruits were received for naming. The Bunyard Cup for a seedling Apple was withheld.

NON-COMPETITIVE EXHIBITS.

Messrs. S. Spooner and Sons had a small exhibit of baskets and dishes of Apples, and showed Newton Wonder, Allington Pippin, Royal Jubilee, Charles Ross, Bismarck, Rev. W. Wilks and Guelph Apples in fine condition and good colour.

An attractive display from the Barnham Nurseries, Ltd., consisted of brown baskets of Apples and Pears. Among the Apples, a few of the best varieties were Peasgood's Nonesuch, Bramley's Seedling, Ellison's Orange, Charles Ross, Ribston Pippin, Rival, Peacemaker, Coronation and Newton Wonder. Berberis and Rhus foliage was used between the baskets.

Mr. J. C. Allgrove had one of the largest exhibits and raised well above his finely-coloured Apples were elegant fruiting sprays of Berberis vulgaris. His arrangement was good, and there were large baskets of Cox's Orange Pippin, Peasgood's Nonesuch, Emperor Alexander, Encore, S. T. Wright (beautifully coloured), Allington Pippin, Gascoyne's Scarlet and Newton Wonder; while Pears were represented by Conference, Souvenir du Congres, Marguerite Marillat, Doyenné du Comice and Marie Louise; Coe's Violet, President, Wyedale and Coe's Golden Drop Plums were also included, while clusters of the brilliantly coloured hips of Rosa rugosa and R. Moyesii were placed on the table between the baskets of fruits.

Messrs. G. Bunyard and Co. put up a very attractive display consisting of Apples, Pears, Grapes, Nuts, Plums and Crabs. The leading Apples were Upton Pine, Peasgood's Nonesuch, Blenheim Pippin, Bramley's Seedling, Stirling Castle, Lord Derby, Sanspareil, Christmas Pearmain, Autumn Pearmain and Coronation, while attractive Pears were Doyenné Georges Boucher, Conference, Beurré Diel, Doyenné du Comice and Beurré Six. Grapes grown in the cool house were represented by neat little bunches of Buckland Sweetwater, Chasselas Vibert, Madresfield Court, Esperione, Gros Maroc, Strawberry Grape, Black Prince, White Frontignon and Reine Olga de Wurtemberg.

A useful education exhibit was put up by the Reading University College, from their gardens, the idea being chiefly to illustrate different methods of packing for market. There were trays with one layer of fruit, bushel baskets and bushel boxes, half-bushel baskets and boxes, and barrels. In the case of the useful half-bushel boxes, the sides were removed and panes of glass put in their place so that the style of packing could be seen quite easily. The exhibit contained particularly good fruits of Worcester Pearmain, James Grieve, Lord Derby, Coronation, Allington Pippin, Newton Wonder and Wealthy Apples.

Messrs. J. Cheal and Sons exhibited their finely-coloured Apples in white baskets and made up a very attractive display. Particularly fine were their samples of Peasgood's Nonesuch, Warner's King, Rival, Encore, Bramley's Seedling, Crawley Beauty, Lady Henniker, Newton Wonder, Ribston Pippin, Ellison's Orange, Charles Ross and King of the Pippins. A few pot Figs were included and fruiting sprays of Pernettya were placed among the baskets of Apples.

A small exhibit of particularly fine fruits was arranged by Messrs. T. Rivers and Sons, who had pot trees of Gascoyne's Scarlet Apples in the centre, with baskets of highly coloured Ribston Pippin, Worcester Pearmain, Wealthy, The Queen, Cox's Orange Pippin, Peasgood's Nonesuch, Washington, King of Tompkin's County and Rival Apples on either side of the trees. Boxes of President Plum were also shown, and Berberis sprays were used for decorative purposes. Messrs. Seabrook and Sons exhibit contained capital specimens of Rival, Charles Ross, Monarch, Bismarck, Ellison's Orange and Newton Wonder Apples.

Messrs. Laxton Bros., Bedford, had a very bright exhibit in which the Edward Langley Blackberry, a new variety, and the so-called Strawberry-Raspberry were used as a background, while sprays of Berberis were placed between the baskets of Cox's Pomona, Gascoyne's Scarlet, Laxton's Superb, Lord Lambourne, Lord Derby and James Grieve Apples.

The Swanley Horticultural College exhibited Apples and Pears in low baskets and used Grevilleas and Berberis sprays for decorative purposes. The leading Apples were Allington Pippin, Newton Wonder, Peasgood's Nonesuch, Bismarck, Loddington, Alfreton and Charles Ross. Messrs. Daniel Brothers contributed a small display of Crimson Bramley, Newton Wonder, Norfolk Beauty, Peacemaker, Herring's Pippin, Charles Ross and Monarch Apples, and large fruits of Pitmaston Duchess, Doyenné du Comice and Santa Claus Pears. The Apples were arranged in baskets with large, coloured leaves of Vitis Coignetiae, and Berberis sprays were placed among the fruits.

Mr. W. J. H. Whittall, Grayswood Hill, Haslemere, exhibited a collection of 135 named varieties of Apples grown by him at 600 feet above sea level. Lady Haddon (gr. Mr. Hayles), Berkhamsted, exhibited a dozen dishes of fully ripe Morello Cherries. Mr. H. Thomas sent, from a West Ealing garden, branches of Conference Pear carrying clusters of eight to ten fruits. Mr. W. Tayler showed examples of his new Apple named Joy Bells.

MEDAL AWARDS.

Silver-gilt Hogg Medal. — To Mr. J. C. Allgrove, Messrs. George Bunyard and Co., Messrs. J. Cheal and Sons, Messrs. T. H. Rivers and Sons, and the University College Gardens, Reading.

Silver Hogg Medal.—To Messrs. Laxton Brothers, Mr. W. J. H. Whittall, Messrs. W. Seabrook and Sons, and the Barnham Nurseries, Ltd.

Hogg Medal.—To Messrs. Daniels Brothers, Messrs. S. Spooner and Sons, and the Swanley Horticultural College.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, October 7, the members of Committee present were Messrs. Hy. Astley Bell (in the chair), J. B. Adamson, R. Ashworth, A. Burns, A. Coningsby, J. McCartney, D. McLeod, W. J. Morgan and H. Arthur (Secretary). Messrs. A. G. Ellwood and J. Thrower were invited to sit with the Committee.

FIRST CLASS CERTIFICATE.

Brasso-Cattleya Jazz.—A fairly large flower of very unusual colouring; sepals and petals orange-red, with a pink tinge; lip round, slightly fringed, orange-yellow, with orange-red lines. From J. B. Adamson, Esq.

AWARDS OF MERIT.

Laelio-Cattleya Carmencita var. Bronze Queen; L.-C. Mrs. T. W. Ward var. Crimson Glory; L.-C. Queen Mary var. Sunray; Cattleya amabilis var. White Queen; C. Princess Royal var. Towneley; and Odontoglossum Lilian var. magnificum, all from J. B. Adamson, Esq.

CULTURAL CERTIFICATES.

To Mr. J. Howes, for Oncidium incurvum, and Cattleya hybrids in variety; to Mr. A. Burns, for Odontoglossums of the grande section; to Mr. W. J. Morgan, for Epidendrum vitellinum; and to Mr. T. W Potts for Oncidium ornithorhynchum.

GROUPS.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded. This exhibit included many fine Cattleyas and Laelio-Cattleyas, Cypripedium Queen Alexandra, C. Nabob, C. Bianca. C. Leyburnense magnificum, C. Madame A. Fevrier, Oncidium incurvum and Miltonia Bleueana grandiflora. Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were awarded a Large Silver Medal for a group of well-grown plants of Odontoglossum grande in variety.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), showed Cattleya Fabia alba, C. labiata var. Prince of Wales and C. Mantinii nobilior. H. J. Bromilow, Esq., Rainhill (gr. Mr. W. J. Morgan), staged a specimen plant of Epidendrum vitellinum. J. McCartney, Esq. Bolton (gr. Mr. T. W. Potts), exhibited Oncidium ornithorhynchum.

Messrs. Sanders, St. Albans, staged a group to which a Large Silver Medal was awarded; Cattleya Fabia var. Arethusa and C. F. sanguinea, Odontonia Brugensis, Oncidium tigrinum and O. praetextum, Vanda coerulea and V. Kimballiana, were all included.

Messrs. Charlesworth and Co., Haywards Heath, showed Odontoglossum crispum var. Caliph, O. Eudora, O. Porthos and O. Reve d'Or. Mr. D. McLeod, Chorlton-cum-Hardy, showed Cypripedium Reginald Young and C. Germain Opoix, West Point var.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

The winter series of lectures was inaugurated on Wednesday, the 21st ult., when Mr. David Torrance, Busby, addressed a largely attended meeting, on "Dahlia Culture." Mr. Thomas Dagg, who presided, announced that on the occasion of the recent show the receipts at the door amounted to £580 17s. 6d., an increase of £64 on last year.

Mr. Torrance exhibited a large collection of Dahlias, consisting of ninety-seven varieties, from his nursery at Busby, and Awards of Merit were given to the dwarf seedlings, Elsie and Purity, while Busby Gem received a First Class Certificate.

Obituary.

R. Johnson.—We regret to learn of the death of Mr. R. Johnson, who was Superintendent of the Tottenham Parks and Open Spaces for about twenty-five years, and only resigned from that position about two years ago. Mr. Johnson laid out the Chestnuts Recreation Ground, and made Bruce Castle Park one of the prettiest places in north London. He was an ardent supporter of the Stoke Newington exhibitions, general adviser to the local allotment holders, and a keen bowler.

ANSWERS TO CORRESPONDENTS.

Agreement for Land and Housing Accommodation.—*A. E. L.* The agreement is not duly stamped as, in view of the rent, it was liable to a duty of £1. This does not however affect the validity of the document, but prevents it being produced in evidence in Court until the proper stamp duty and penalty has been paid, also a Court fee. You do not give the date of the agreement, but if the tenancy is not protected by the Rent Restriction Act and the proper notice to determine the agreement has been given and ignored, you should proceed in the County Court for ejectment.

Apples Diseased.—*W. V.* Your Apples are affected by scab disease, caused by the fungus Venturia inaequalis. Syringe the trees this winter with a solution of sulphate of iron and next spring, spray with diluted Bordeaux mixture, just when the buds are beginning to open, again when the petals are falling from the flowers and a third time when the young fruits are about the size of Peas.

Carnation Leaves Diseased.—*H. G.* Your Carnations are suffering from a rather bad attack of leaf disease, caused by the fungus Septoria dianthi. As the trouble is liable to spread rapidly, all infected leaves should be removed and the plants sprayed with a solution of potassium sulphide. The disease attacking your Tomatos is probably Cladosporium scabies, but, of course, we cannot tell without seeing specimens.

Conifers Diseased.—*W. M. C.* The specimens received for examination were not large enough to enable us correctly to identify the disease attacking your Pine trees, but there were indications that the shoots may have been injured by one of the Pine Shoot Tortrix Moths (species of Retinii). Injured shoots usually wilt and die towards the end of summer. All that can be done in the case of this pest is to collect and burn infected shoots during early summer, before the end of the pupation period, which is usually in June.

Creosoting Tree Stakes.—*J. W.* If you treat the stakes with creosote and allow them to dry for a few days before driving them into the ground, they are not likely to cause injury to the trees. If you apply the creosote with a brush it would be advisable to give two or three dressings at intervals of a few days.

Cyanide for the Destruction of White Fly and Mealy Bug.—*R. G.* For tender plants, such as Begonias, one ounce of sodium cyanide, one-and-a-half fluid ounce of sulphuric acid, and five fluid ounces of water should be used for every five hundred cubic feet of space, care being taken to fumigate during the evening, after having kept the plants on the dry side for a day or two. For a vinery, where the vines are at rest, the above quantities should be used for every two hundred cubic feet of space. Full particulars for cyaniding were given in our issue for November 22, 1924, p. 362.

Melon Seeds Germinating Inside the Fruit.—*N. McM.* Although not a matter of frequent occurrence, the germination of seeds inside the fruits of Melons and Vegetable Marrows has been recorded on numerous occasions, and it appears to occur most frequently when the fruits are a long time coming into maturity, and when a burst of warm weather comes at a late period, or, in the case of Melons, when extra artificial heat is used to bring the fruits to maturity. An excess of moisture at the roots may also have some influence.

Names of Fruit.—*H. M.* 1, Blenheim Pippin; 2, Fearn's Pippin; 3, not recognised; 4, Hormead Pearmain; 5, Allington Pippin; 6 and 38, Ribston Pippin; 7, Royal Russet (syn. Leather Coat); 8 and 16, Dumelow's Seedling (syn. Wellington); 9, not recognised; 10, Ashmead's Kernel; 11, Bismarck; 12, Belle de Pontoise; 13, White Nonpareil 14, Reinette du Canada; 15, Small's Admirable; 17, Lane's Prince Albert; 18, Lord Suffield; 19, White Westling; 20, Durondeau; 21, Cellini; 22, Hawthornden; 23, Margaret Marillat; 24, Napoléon III; 25, not recognised; 26, Beurré Sterckmans; 27, Beurré Bosc; 28, not recognised; 29, 31 and 37, Louise Bonne of Jersey; 30, not recognised; 32, Autumn Bergamot; 33, Beurré Hardy; 34, Beurré Diel; 35, Clapp's Favourite; 36 and 39, not recognised; 40, Jalousie de Fontenay; 41, Pitmaston Duchess; 42, Van Mons Léon Leclerc; 43, Vicar of Winkfield; 44, Williams's Bon Chretien; 45, Glou Morceau; 46, Catillac; 47, Beurré d'Amanlis.—*R. J.* 1, Winter Strawberry; 2, Bramley's Seedling; 3, Sturmer Pippin; 4, Nonesuch; 5, American Mother; 6, Calville St. Sauveur; 7, Bachelor's Glory; 8, Flower of Kent; 9, Newton Wonder; 10, Stirling Castle.—*W. A. L.* Apple Cox's Orange Pippin; Pear Marie Louise. Apple Belle de Pontoise is classed as a culinary variety.—*C. H.* 1, Nanny; 2, Hanwell Souring; 3, Chelmsford Wonder; 4, Anne Elizabeth; 5, Newton Wonder; 6, Lemon Pippin; 7, Margil; 8, Scarlet Nonpareil; 9, Old Nonpareil; 10, Gozar Pippin (syn. Stone Pippin); 11, Easter Pippin; 12, Cellini.—*R. H. J.* 1, Emperor Alexander; 2, Stone's (Loddington); 3, Lord Burghley; 4, Lane's Prince Albert; 6, Small's Admirable.—*C. A.* Apple Margil. *J. E. A.* Probably James Grieve.

Names of Plants.—*A. C.* 1, Sphacele Lindleyi; 2, Feijoa Sellowiana; 3, Abutilon megapotamicum (syn. A. vexillarium); 4, Abelia floribunda; 5, A. longituba; 6, Leptospermum scoparium; 7, Lonicera species, probably L. sempervirens; 8, Correa alba; 9, Olearia nummularifolia.—*Mrs. H. C.* Conifer: Cupressus pisifera var. filifera; Tree: Acer campestre.—*E. J.* Abelia rupestris.—*J. B. P.* Specimens very scrappy for identification, but they appear to be forms of Linaria purpurea.—*E. C. V. G.* 1, Berberis species; 2, Ceanothus Gloire de Versailles; 3, Polygonum species, probably P. compactum; 4, Aralia chinensis; 5, Euonymus latifolius; 6, Phytolacca decandra; 7, Salvia Horminum.—*E. W. D.* 1, Tecoma grandiflora; 2, Leycesteria formosa; 3, Lythrum Salicaria variety.—*H. F. T.* 1, Alchemilla laciniata; 2, Ligustrum coriaceum; 3, Prunus Padus (Bird Cherry); 4, P. cerasifera (Myrobella).—*C. H.* Ulmus viminalis.—*A. P., Claygate.* 1, Mentha Pulegium; 2, Chlorophytum elatum; 3, Berberis vulgaris; 4, Amelanchier canadensis; 5, Cornus Mas; 6, Platanus acerifolia; 7, Cupressus pisifera var. squarrosa sulphurea; 8, Cupressus Lawsoniana var. aurea; 9, Larix sp.—*A. B. H.* A form of Salvia Przewalskii, but the under sides of the leaves are more woolly than usual.—*E. W.* 1, Veronica repens; 2, V. Lyallii; 3, send when in flower; 4, Polemonium caeruleum; 5, Anthericum Liliago.—*A. W. G.* Impatiens Roylei.—*C. A.* Polygonum affine.—*W. F. H.* Schizostylis coccinea.

Peaches and Grapes.—*J. S.* The Peach sent for naming was decayed at the base, at the crown and around the stone, which made it impossible to name it correctly. We certainly do not think it is Dymond; it is more like Princess of Wales in the colour of the flesh, and the leaves, with round glands, are like those of that variety. Neither Dymond nor Princess of Wales should be bitter; both are highly-flavoured varieties. Give the border a dressing of slaked lime in the autumn and use more potash when feeding the trees next spring. Insufficient water at the roots over a long period would cause roots to grow down into the subsoil, and this, with overcropping, would cause the stones to split and the fruits to be of poor flavour. Partially lifting the trees and bringing the roots nearer to the surface, adding plenty of lime-rubble and a fair sprinkling of bone-meal to the soil, would result in increased fertility of the trees and improve the quality of the fruits generally, as, apparently, your cultural methods are all that can be desired. The wet season may have contributed to the splitting of your Madresfield Court Grapes. Always maintain a little warmth in the water-pipes and a constant circulation of warm air from the time the berries commence to colour. Do not withhold water and atmospheric moisture suddenly and you should not be troubled further with cracking.

Tulips for planting an Elliptical Bed.—*Miss C.* You give no indication as to what colours you require, whether you prefer the strong, or softer shades. You may plant the bulbs six inches apart, and will require in all about 750 bulbs. Here again we are at a loss, as you do not state how wide the edging of Crocuses is to be. As the position is exposed, it would be wise to use only the dwarfer-growing Tulips. If you like scarlet or red shades, you could use Glow for the outer planting, then Isis, with William Pitt or Bartigon, for the centre; all these sorts grow about two feet tall. If you prefer a taller variety for the centre you can use Farncombe Sanders. If you like the softer rose and pink shades, Clara Butt, White Queen and Margaret may be planted in the centre, using White Queen next to the Crocuses. A mixed planting of Clara Butt, Loveliness, Rev. Ewbank and Suzon is very beautiful and has been much admired. All the above are Darwin varieties; if you prefer the Cottage varieties you could try Picotee for the outside, followed by Inglescombe Yellow and Inglescombe Pink in the centre, or if you like a stronger colour you could plant Gesneriana major in the centre. Some of the varieties with brown, bronze and orange shadings are very beautiful, such as Dom Pedro, Panorama and Prince of Orange.

Communications Received. — A. W. — J. A. V. — F. J. H. — H. C. T. — H. A. S.—A. T. J. J.—A. C.—Altho.—A. B. W.—L. G. S.—Yorks.—J. B.—W. S.—P. A.—H. A. S.—T. L.—L. K.—G. F. G.—T. L.—J. S.—G. T. P.—C. C. —A. H.—A. G.—G. D. K.—A. G.—L. K.—A. M.—G. B.

REGISTERED PLANT NOVELTIES.

The following plants have been registered with the Federation Horticole Professionelle Internationale :—

Rose Distinction.—Polyantha, dwarf (remontant); a fixed sport from Joseph Guy; flower of similar size; colour rose neyron red, turning to deep rosy-pink. Raisers, MM. E. Turbat et Cie., 67, Route d'Olivet, Orleans.

Rose Marie Gouchault.—Hybrid of Wichuriana and multiflora; light red, turning to salmon-pink flowering three weeks before Dorothy Perkins; good for forcing. Raisers, M.M. E. Turbat et Cie.

Rose Tis Blanc.—Polyantha, Dwarf, clusters of twelve to fifteen flowers, large for the section, pure white, centre suffused with cream. Raisers, MM. E. Turbat et Cie., Orleans.

Rose Seduction.—Dwarf, clusters of fifty to sixty flowers; very lasting; Peach-blossom colour. Raisers, MM. E. Turbat et Cie., Orleans.

Rose Madame Delmas.—Very vigorous, large foliage; colour cherry-red; very scented; keeps well and does not get blue. Raised by M. Geyer Pierre, Manager, La Roseraie de St. Jean, Antibes, and offered for sale by Dr. Delmas, La Roseraie de St. Jean, Antibes.

Rose George Perdoux.—A H.T. variety suitable for grouping. Flowers light copper and carmine, in bunches of five or six. Raised and offered by MM. Barbier et Cie., 16, Route d'Olivet, Orleans.

Rose Marie Menudel.—Flowers single, on long and strong stems. Colour similar to that of Her Majesty, with a lemon-pink centre. Good for forcing, Raised by MM. Barbier et Cie.

Sambucus nigra splendens.—Large foliage with golden-yellow markings; very consistent. Raised by MM. Barbier et Cie.

MARKETS.

COVENT GARDEN, Tuesday, October 11th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	5 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink	18 0-21 0
—yellow ...	12 0-18 0
—bronze ...	15 0-18 0
—white ...	12 0-18 0
Crotons, doz....	30 0-45 0
Cyrtomiums ...	10 0-25 0
Erica gracilis, 48's, per doz.	27 0-30 0
— — 60's, doz.	12 0-15 0
— mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0-30 0
— — 60's, doz.	12 0-15 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz., bun.	8 0—9 0
—cuneatum, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	6 0—7 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short ,, ...	0 9—1 3
—Sprengeri, bun. long sprays...	2 0—2 6
med. ,, ...	1 0—1 6
short ,, ...	0 6—1 9
Asters, white, per doz. bun.	6 0—7 0
—coloured, per doz. bun. ...	5 0—6 0
—single, coloured, per doz. bun.	3 6—4 6
Carnations, per doz. blooms .	2 6—4 6
Chrysanthemum Sanctity, per doz. blooms .	3 0—4 0
—Mrs. J. Pearson, per doz. bun.... ...	10 0-15 0
—white Duchess, per doz. blooms	4 0—6 0
—yellow, per doz. blooms ...	3 0—6 0
—bronze, per doz. blooms .	2 6—6 0
—spray, bronze, per doz. bun.	15 0-21 0
—spray, pink, per doz. bun.	15 0-18 0
—spray yellow, per doz. bun.	15 0-18 0
—spray white, per doz. bun.	9 0-21 0
Cornflower, blue, per doz. bun.	2 0—2 6
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	9 0-12 0
Gardenias, per doz. blooms .	4 0—6 0
Gladiolus, giant varieties, per doz. spikes—	
—scarlet ...	1 6—2 0
—white ...	1 6—2 0
Heather, white, per doz. bun.	6 0—9 0
Lapagerias, per doz. blooms .	3 6—4 0
Lilium auratum, per doz. blooms	4 0—5 0
—speciosum album, per bun.	— 4 6
—short, per doz.	4 0—4 6
—rubrum, long, per bun. ...	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per bun.	2 0—2 6
—short, doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	30 0-36 0
Marigolds, per doz. bun. ...	3 0—4 0
Michaelmas Daisy King George, per doz. bun	9 0-10 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas ...	36 0-48 0
Physalis, per doz. bun.... ...	18 0-24 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—3 0
—Madame Butterfly ...	2 0—4 0
—Golden Ophelia	2 0—3 6
—Mrs. Aaron Ward ...	1 0—1 6
—Roselandia ...	2 6—4 6
—Madame Abel Chatenay ...	2 0—3 0
—Liberty ...	1 6—3 0
—Molly Sharman Crawford ...	2 6—3 6
—Premier ...	— 3 0
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails ...	3 6—4 6
Stock, per doz. bun.—	
—double, white	9 0-12 0
— —mauve ...	9 0-12 0
Violets, per doz. bun.	3 0—6 0

REMARKS.—Amongst Chrysanthemums there is still a limited supply of good quality blooms, and all bunch stuff realises better prices than usual for early October. What remains of Asters, Gladioli and Stock is only of poor quality. Carnations became a trifle firmer in price towards last week end. Roses of the following varieties keep up their excellent quality: Madame Abel Chatenay Madame Butterfly, Golden Ophelia, Ophelia, Molly S. Crawford, Liberty, Richmond and Roselandia. Amongst the Liliums, L. speciosum album and L. s. rubrum are the shortest supply and much below requirements. L. longiflorum remains unchanged in price owing to a more regular supply. A few L. auratum are still available, but there is little demand for them. Arum (Richardias) are becoming more plentiful and show a general improvement in quality. Owing to a short supply of Stephanotis and Lapagerias, Camellias are selling more freely. A small consignment of scarlet Nerines was received from Guernsey during the week. The first consignment of Parma Violets arrived on Saturday last from the south of France. Single Violets are increasing in quantity almost daily and are of finer quality and prices are on the down grade. Amongst Orchids, Cypripediums are more plentiful and a few more Cattleyas have been offered during the week.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Aubergines, per doz.... ...	2 0—3 0
Beets	4 0—6 0
Cabbage, per doz.... ...	1 0—1 6
Carrots, per bag	4 0—5 0
Cucumbers, doz.	4 0—5 6
—Flats, 36's, 42's	12 0-16 0
French Endive, per doz. ...	2 0—2 6
—Batavia, per doz.	2 0—2 6
Guernsey Beans, per lb. ...	0 9—1 3
Leeks, per doz.	1 6—2 0
Lettuce, round, per doz. ...	0 9—1 6
Mint, per doz....	1 6—2 0
Mushrooms—	
—cups... ...	2 0—3 0
—broilers ...	1 0—1 6
—field ...	0 9—1 3
Onions—	
—Dutch ...	8 —9 6
—Spanish ...	14 0-16 0
Parsnips, cwt....	4 0—5 0
Peas, per bushel	14 0-18 0
Potatos— English, cwt.	5 0—8 0
Sprouts, ½-bag	4 0—7 0
Tomatos, English— New crop ...	6 0—7 0
Old crop—	
—pink... ...	4 0—5 0
—pink and white	4 0—5 0
—white ...	3 0—3 6
—blue ...	3 0—3 6
—Guernsey ...	3 0—3 6
—Jersey ...	2 0—4 0
—Dutch ...	2 6—3 0
—St. Malo ...	2 0—3 6
Turnips, per cwt.	3 6—4 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples. English—	
—Lord Derby	3 0—5 0
—Warner's King	3 0—5 6
—Lane's Prince Albert ...	3 0—5 0
—Bramley's Seedling ...	4 0—6 0
—Other cookers	3 0—4 0
—finest Worcester Pearmain, ½ sieve ...	5 0—7 0
—ordinary ...	3 0—4 0
— Cox's, ½ sieve	6 0-15 0
Apples, American—	
—Gravenstein, per case ...	10 0-12 6
—York Imperials, per barrel ...	25 0-40 0
—King David, per case ...	14 0-16 0
—Newtown Pippin	15 0-16 6
—American Cox's, per case ...	20 0-22 0
Bananas ...	14 0-20 0
Figs, French, per box ...	1 0—1 6
Grape Fruit—	
—Porto Rico ...	32 6-40 0
Grapes, English	
—Alicante ...	1 3—2 3
—Colmar ...	1 6—3 6
—Black Hamburgh, per lb.	1 0—2 6
—Gros Maroc...	1 0—2 0
—Muscat ...	2 6—5 0
—Canon Hall...	2 6—5 0
Lemons, Messina, boxes ...	18 0-28 0
—Naples, per case...... ...	55 0-65 0
Melons, each—	
—English and Guernsey...	1 6—5 0
Canteloupe...	2 0—6 0
Nuts—	
—Cobs... ...	— 1 0
—Walnuts ...	0 4—0 8
Oranges, per case—	
—Cape Navel...	20 0-25 0
—Cape Valencia	14 0-20 0
Nectarines, doz.	10 0-24 0
Peaches, per doz.... ...	6 0-24 0
Pears—	
—Fertility ...	3 0—5 0
—Pitmaston Duchess, ½ sieve	3 0—7 0
—Conference, ½ sieve	4 0—6 0
—Beurré Hardy, ½ sieve ...	6 0—8 0
Pears, Californian—	
—Beurré Hardy	24 0-27 0
—Bartlett ...	24 0-26 0
—Comice, ½ case	18 0-20 0
Pears, Oregon—	
—Beurré Bosc	21 0-22 0
—Beurré Anjou	24 0-25 0
Pears, French—	
—Beurré Hardy, crates, 18's, 15's	4 0—4 6
Pines, case ...	28 0-40 0
Plums—	
—Switzer ...	4 0—5 0
—Californian Prunes, per box	10 0-11 0
—English Prunes	— 8 0

REMARKS.—Some improvement is noticeable in the general demand in most sections. Quantities of English Apples show a considerable decline and better values are ruling for the best Worcester Pearmains. Cox's Orange Pippin is rather more plentiful but shows much variation in quality. Although large cooking Apples are comparatively scarce, there are as yet no high prices, even for the finest samples. Hothouse Grapes have come along in large supply, mainly from the Channel Islands, and are quoted at reasonable prices. Peaches sell at high prices for perfect specimens. English Pears are only in moderate demand, but fairly good figures are ruling for choice varieties. Apples from the North American continent are reported as being on the scarce side, and available supplies sell fairly well. Pears from California, and Oranges also, meet a popular demand and generally arrive in good condition. Mushrooms increase in supply almost each day, but a satisfactory price level is being maintained. Tomatos sell well if the fruit is of the new crop; old crop Tomatos are difficult to sell. Jersey is sending Tomatos rather heavily, but well-finished fruits are selling readily. The Cucumber trade is moderately good. The Guernsey Bean trade continues a little unstable, prices showin some fluctuation for similar produce from day to day. Salads are improving. Old Potatos are in firm demand and selling well.

GLASGOW.

Improved conditions prevailed in the cut flower market especially during the last three days of the week, when a larger volume of business was done at firm prices. As the result of the good weather, Chrysanthemums were plentiful and disbudded blooms were readily disposed of at the following values:—Debutante, 2s. 3d. to 2s. 6d. for 6's; Cranford Yellow, 2s. to 2s. 6d.; Pink Delight, 1s. 6d. to 1s. 9d.; Harvester, 1s. 3d. to 1s. 8d.; Sanctity, 1s. 4d. to 1s. 6d.; and Alcalde, 2s. 6d. to 3s. for 12's; white sprays made from 6d. to 8d. for Holmes' White; Polly, 5d. to 7d; Abercorn Beauty, 5d. to 6d.; McAlpine, 4d. to 5½d.; Dolores, 1s. to 1s. 3d.; Phoenix, 1s. 2d. to 1s. 4d., and Betty Spark, 1s. to 1s. 3d. Carnations were worth, 2s. 6d. to 3s. per dozen; Pink Roses, 3s. to 3s. 6d.; red, 2s. 6d. to 3s.; Lily-of-the-Valley, 3s. per bunch; Lilium Harrisii and L. speciosum rubrum, 2s. to 2s. 6d.; Calendula, 2d. to 4d.; Smilax, 1s. to 1s. 6d.; and Asparagus, 9d. to 1s.

A feature of the fruit market was the further sharp advance in the price of Apples. British Columbia Jonathan averaged 20s. per case; Wealthy, 14s. to 16s. 6d.; Nova Scotia Gravenstein (No. 1), 28s. to 30s. per barrel; (No. 2), 22s. to 26s.; Dudleys (No. 1), 26s. to 28s.; York Imperial, 30s. to 38s; Emperor and Wolff River (No. 1), 22s. to 25s.; (No. 2), 18s. to 21s.; Blenheims, 24s. to 26s.; Porto Rico Grape Fruit realised 32s. per case; South African Oranges, 18s. per case; Sunkist ditto, 26s. to 29s.; Magnifique Pears, 14s. per half-case; Beurré Hardy 15s.; Pomegranates, 11s. 6d. to 14s.; Smyrna Figs, 8s. per 10 lb. box; Canadian Peaches, 10s. per case of 28 and 32; Pineapples, 4s. 6d. to 5s. 6d. each; White Grapes, 3s. per lb.; black, 1s. to 1s. 6d; Victoria Plums (table quality), 8d. to 10d.; (cooking), 4d. to 5d.; Murcia Lemons, 40s. to 42s. per case.

Tomatos were dearer at 8d. to 10d. per lb.; Mushrooms, 3s. 6d.; Cucumbers, 3s. to 6s. per dozen; Lettuce, 1s.; Cauliflower, 3s. to 7s.; and Brussels Sprouts, 5s. 6d. per bag of 21 lbs.

THE WEATHER IN SEPTEMBER.

The protracted spell of wet weather was continued in an intensified form all through the month. The normal rainfall for the district is under 2½ inches, but the huge total of 9·23 inches fell during the month. September 6 yielded a rainfall of over one inch. Sunshine also was under the average though only to the extent of half-an-hour daily, the total for the month being 91·8 hours. The temperature was higher than the average and gave an actual mean of 51°. The highest maximum temperature of 69° occurred on the 1st, and the lowest—39°—on the 27th. The lowest grass minimum was 17° on the 27th, and that also was the only night of ground frost. The soil temperature at one foot deep fell from 58° to 48° during the month. Barometric readings were generally low. The highest reading of 1027 millibars was obtained on the 3rd, and the lowest, 980 millibars, on the 24th. *William McClelland, Meteorological Station, St. Andrews Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENT.

Mr. W. Wynn, for the past four years gardener to Colonel G. S. SPURRIER, D.S.O., Luerns House, Goring Heath, Oxon., and previously five years gardener to H. WALLIS, Esq., at the same place, as gardener to The Hon. ALGERNON BORTHWICK, Woodcote House, Woodcote, Oxon. (Thanks for 1s. 6d. for R.G.O.F. Box.—EDS.).

SCHEDULES RECEIVED.

DERBYSHIRE HORTICULTURAL ASSOCIATION.—Twentieth Chrysanthemum Show to be held at the Royal Drill Hall, on Thursday, Friday and Saturday, November 3, 4 and 5.—Secretary, Mr. W. Wardman, 5, St. Augustine Street, Derby.

IPSWICH AND DISTRICT GARDENERS' ASSOCIATION.—Exhibition to be held in the Corn Exchange, on Thursday, November 10.—Secretary, Mr. R. Ball, 30, Withipoll Street, Ipswich.

CATALOGUES RECEIVED.

R. GILL AND SON, Himalayan Nurseries, Penryn, Cornwall.—Himalayan, Chinese and other Rhododendrons, etc.

BARR AND SONS, 11, King Street, W.C.2.—Flag Irises.

T. RIVERS AND SON, LTD., Sawbridgeworth.—Fruit Trees, Roses, shrubs and hardy perennials.

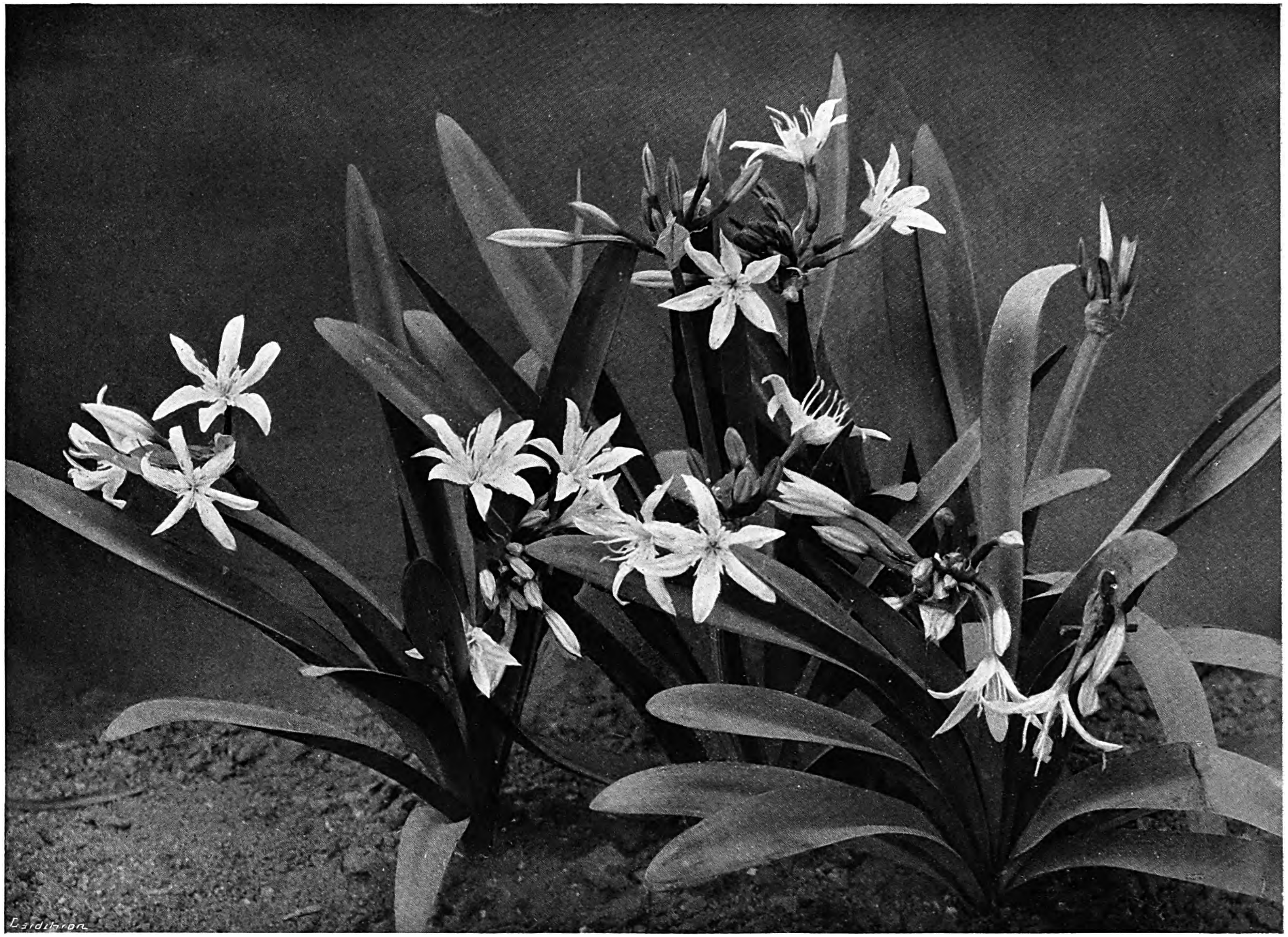
E. P. DIXON AND SONS, LTD., Hull.—Nursery Stock.

Foreign.

SLUIS EN GROOT, Enkhuizen, Holland.—Vegetable seeds.

L. SPATH, Berlin-Baumschulenweg.—Nursery stock.

ERNST BENARY, Erfurt, Germany.—Novelties.



PANCRATIUM ILLYRICUM.

THE Gardeners' Chronicle

No. 2130.—*SATURDAY, OCTOBER* 22, 1927.

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Supplement Plate.

Pancratium illyricum.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 47·5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 19, 10 a.m. Bar. 29·9°. Temp. 55°. Weather, Dull.

Strawberry Cultivation (1).

Every gardener who grows Strawberries should read the article in the *Journal of the Ministry of Agriculture*,* summarising the investigations carried out by Messrs. Ball, Mann and Staniland at the Long Ashton Research Station. The investigations are not only valuable in themselves, but they provide a model of what investigations devoted to horticultural ends should be. The problem which offered itself for investigation was the serious fall in yield which has characterised the Strawberry crop in recent years. Whereas in years gone by two tons to four tons of fruit to the acre used to be obtained the yield now is little or no more than fifteen hundredweights. It is easy to guess at the causes of this large reduction, but to find out the truth of the guess must needs be a laborious process. This the authors recognised and proceeded to the enquiry. Sundry explanations have been advanced from time to time to account for the falling off in yield. The land becomes Strawberry sick! Varieties propagated vegetatively for many generations undergo a natural deterioration! The Strawberry plant, like the Potato, falls a victim to one of the obscure virus diseases which works its sterilising way gradually and progressively!; or else the war is responsible! When more food had to be grown, County agricultural authorities often issued edicts against the growing of Strawberries. The area under cultivation was restricted; and so when peace came there were not enough good plants to supply the demand for runners, hence the quality of supply deteriorated! Lastly the Strawberry aphis, which is known to attack the plant, may be a more serious pest than is generally considered. This more or less exhausts the guessing process, and having given, and rightly given, rein to conjecture, the authors proceeded to set about testing the various hypotheses. But before doing so they decided to learn something about the Strawberry plant itself. This was wise, for we do not know the detailed life history of any plant. Careful and prolonged observation on the growth and development of the Strawberry resulted in a valuable addition to knowledge and one, moreover, which must form the only secure basis for any final conclusions with respect to the cause of the falling off of yield and the means of restoring the Strawberry to its pristine prolificness. The observations were made on upwards of 1,000 plants of Royal Sovereign, planted at Long Ashton on September 2, 1924, and lifted in batches of ten, at intervals of from three to six weeks during the next two years. These observations show that no sooner is a runner planted than the root-system begins to develop. Strong laterals are thrown out from the main roots, and white roots are produced adventitiously from the crowns. The crowns themselves do little during these autumn months (September to December). Then the plant becomes dormant. But by February it begins to become active again. By March, more fine lateral roots have been produced from the autumn-formed roots. By the end of April these fibrous roots are numerous and are, of course, all important as the organs of supply. They are therefore properly called feeding roots. In the meantime the crown has grown, three or four new leaves having been formed, and the flowering trusses are also partially developed. During May and June the old roots turn brown and black. This, however, is not a sign of death. It is due to cork formation as a result of which the outer layers are cast off and new tissues, which are to serve as starch-storing organs, are formed beneath the corky layers. Nothing of particular interest happens to the roots till mid-July. At that period, however, a new phase of root development begins. Right and left of the leaf base of the earliest leaves new roots appear. They must have encouragement, for on their growth must depend that of the whole plant. After they have formed, new foliage arises and daughter crowns appear. The July-formed roots grow vigorously in August, and the daughter crowns also produce new roots. As the year wanes, this post-cropping root development gradually ceases. So much for development: next, it was necessary to determine the distribution of the roots. Careful investigation showed that the Strawberry is a remarkably surface-rooting plant. One-quarter of the total root system is confined to the top inch of soil, and three-quarters of the whole root system lie within the top three inches; seventeen per cent. lie between the third and sixth inch of soil, and a few roots straggle so deeply as thirteen inches to sixteen inches. These facts of periodicity of growth and superficiality of distribution give the gardener information on which he can act. They provide the basis for the kinds of cultivation and fertilisers which he must use and also indicate the time at which they must be applied. Here the first part of the investigation ends. We will conclude an account of the second part in the near future.

Pancratium illyricum.—"A native of Sicily, Corsica, Spain and Sardinia; Morison says he found it near Rochelle, buried very deep in the sand of the sea-shore. Thrives in the open ground when placed close to the foot of a wall in a dry southern border; so do Amaryllis vittata, belladonna and formosissima, as we have seen at the Nursery of Messrs. Grimwood and Wykes, Kensington, where our drawing was taken. In *Hort. Kew.* it is mentioned as a greenhouse plant, but we never found it succeed with that treatment. Is generally mistaken among the nurserymen for Pancratium maritimum, a plant we have not yet found in bloom in our gardens. The bulbs of our species are often imported from Holland with those of the Hyacinth. Cultivated by Parkinson in 1615." This quotation from the *Botanical Magazine* (t. 718), February 1, 1804, is ample proof that Pancratium illyricum is a very old cultivated plant; nevertheless, it is still uncommon even in those gardens where the less popular, but no less beautiful plants are grown. The white, fragrant flowers are freely produced when the bulbs are established in a warm, well-drained border, and as the leaves die down before winter there is no need for elaborate protection. The plants illustrated in the Supplement Plate that accompanies this issue were very beautiful when we saw them in May, flowering in a narrow border outside one of the glasshouses at Oxford Botanic Garden—where Mr. W. G. Baker cultivates many interesting plants with great skill and success.

Preservation of London Squares.—A large scheme for the preservation of no fewer than four hundred squares and similar open spaces in London is being considered by a Royal Commission that has already held one meeting at the House of Lords. This Royal Commission proposes to hold further meetings in public, and about four weeks hence will receive evidence from the London County Council.

The School Garden and its Place in Education.—The teaching of biology in schools seems at last destined to come into its own. This was one of the many important lessons brought out when the Imperial Social Hygiene Congress met in the first week of this month under the auspices of the British Social Hygiene Council, at the Caxton Hall, Westminster. The Rt. Hon. W. Ormsby-Gore, Parliamentary Secretary for the Colonies, when addressing the Congress on "Colonies, Protectorates and Mandated Territories," complained that children in their early days were taught very little science, and then they were nearly always taught chemistry and physics. Biology very rarely appeared in the curriculum, and yet this was probably the most important subject for mankind, as it affected men, animals and plants. Unless, he said, a wider grasp of the significance of biology was attained, it would be difficult to get the policy of personal and social hygiene carried out. What was wanted was to develop a biological conscience which should concern itself with such questions as the laws of nutrition and so forth. During the same Congress the whole problem of biological teaching was considered by Dr. W. K. Spencer, of the Board of Education, both in the widest meaning of the term and as it applied directly to the study of plants and animals. He pointed out how the Board of Education had recently revised their "suggestions for the consideration of teachers" in the public elementary schools. The science teaching was now definitely linked with that on health, and the Board had pointed out that amongst the minimum content of knowledge essential to an understanding of everyday occurrences was that obtained by an elementary study of the conditions for the healthy growth of animals and plants. This, as he said, can only be satisfactorily carried our by observations upon the living organism, and, therefore the old object lessons are replaced, to a large extent, by activities in the case of the younger children who can assume definite responsibilities for looking after the animals and plants kept indoors. They wash the flower vases and arrange flowers brought to school or obtained from the garden; they prepare seed-pans and window-boxes; they make simple plant-labels, sow seeds, set up germination experiments, change the water in the smaller aquaria and feed the tadpoles, sticklebacks and other forms of pond life. After showing that it is a comparatively simple matter to study the elements of physiology by means of plants, Dr. Spencer continued:—"A very important factor in this training is the growth in the number of school gardens. Observations in natural history can often be carried out far more conveniently in the school garden than on country walks, and the cultivation emphasises the necessity of continuous care. It is customary for both boys and girls to take a part in the care of the garden, and an endeavour is usually made to make it more beautiful as well as utilitarian. Experimental science in co-ordination with the garden fits well within a normal biological course." Professor Winifred Cullis told a dreadful story of the way in which the biological sciences have been treated in the past. She was once asked to examine a group of physical training experts for a diploma of Physical Training and Physiology. Five questions were set in Physical Training and four in Physiology, only two of which were compulsory. Many of the physiology answers were so bad that she could give no marks, but the answers in Physical Training were so good that the candidates were awarded the diploma in Physical Training and Physiology. Her protests, she said, were so violent that she was never asked by that college to examine again. That the Imperial Social Hygiene Congress was uninimous in insisting on the study of biology as the basis of hygiene and that delegate after delegate insisted that it must be treated as a serious subject, is all to the good. A knowledge of the habit and growth of plants undoubtedly is helpful to an understanding of hygiene, but the call of botany and the call of gardening are so clamant that if they are taught with sympathy they will never be tied to the chariot wheels of even so adorable a mistress as Hygiene. If the schools teach botany as a living subject and not in the dry-as-dust spirit of the old grammarians, it will claim its own votaries. Many, if not most, of the school teachers are fired with enthusiasm and are encouraged to work out their own methods.

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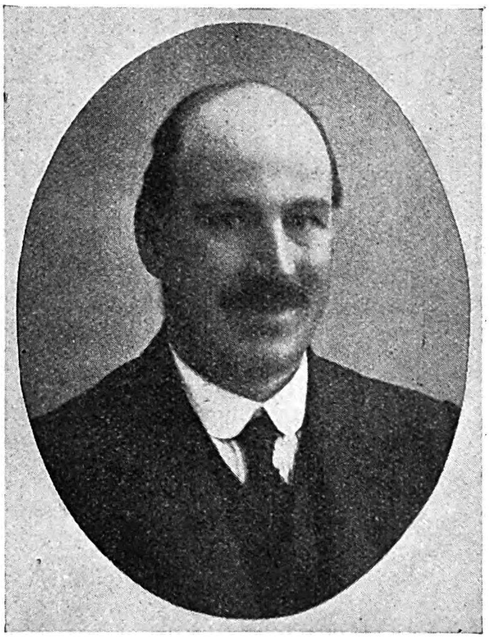
Ken Wood, Hampstead.—By the will of the late Lord Iveagh, who purchased seventy-four acres of the Ken Wood estate, Hampstead, including the mansion, some years ago, this property is to be added to the portions already acquired for the use and enjoyment of the public. It is not known how soon this bequest will become effective, but when it does, the whole of Ken Wood Estate will have been saved for the nation. In November, 1924, when the greater part of the estate was purchased out of funds raised by the Ken Wood Preservation Committee, it was greatly feared that it would be impossible to prevent the remaining portion from being built over. Lord Iveagh's generous and public spirited action in purchasing the remainder himself, with a promise that it should be handed over for public use at the expiration of ten years, set these fears at rest. The portion of Ken Wood which came under the aegis of the London County Council in 1924-5 has been dealt with in a capable and sympathetic manner, and is enjoyed by many thousands of the public every summer. The woodland, which is one of the few remaining portions of the ancient Middlesex forest, has been fenced in for protection from damage, but not in an unsightly manner; the ducks and swans which nest on the lakes are protected from annoyance by light iron railings, and one of the lakes has been made suitable for a bathing pool for girls and women, by whom it is used freely. It will be interesting to see what use is eventually made of the Adam mansion which stands in a commanding position on the slope of the hill overlooking the grounds. Its demolition would certainly detract from the interest of the estate, and it would appear preferable to use it, if possible, as a refreshment house, in the same manner as Lauderdale House in Waterlow Park, and the Golders Green mansion.

Mr. Allan Falconer.—One of the most successful of modern exhibitors is Mr. A. Falconer, who began his gardening career in 1897 as an apprentice to a nurseryman and florist at Lyndhurst, in the New Forest, where he stayed two years, subsequently moving on to Bryanston Hall, Blandford, where he worked in all the departments before serving for two years as journeyman under Mr. Pilgrim, at Bodorgan Hall, Isle of Anglesey, where he gained a large and varied experience with stove and greenhouse plants and indoor fruit culture. After leaving Bodorgan, Mr. Falconer served temporarily in Messrs. Dickson's nurseries at Chester, and then became journeyman under Mr. Metcalfe, at Headfort House, County Meath. He remained in Ireland for one year and then became journeyman under Mr. Sanders, at Halton Park, Tring, where, it is interesting to recall, the late Mr. Alfred Rothschild required ripe Figs for Christmas Day. After a stay of three years at Halton, Mr. Falconer became decorator to Lady Hollanden, at Hall Place, Kent, where he stayed for one year. His next post was that of outside foreman under Mr. David Gibson, at Ford Manor, Lingfield, where, at that time. the gardens were being reconstructed, a new range of glass erected and a golf course laid down. It was at Ford Manor that Mr. Falconer gained his special knowledge of growing vegetables for exhibition. Eventually he became gardener to the late Major J. J. Joicey, Poulton Priory, Fairford, but war broke out and he became a signaller in the Royal Garrison Artillery, and saw plenty of fighting in France. After a period in hospital, he was demobilised and returned to Poulton Priory, but soon afterwards commenced business on his own account: this, however, did not appeal to him, and in February, 1922, he took charge of the garden at the Cheadle Royal Mental Hospital, Cheshire, which at that time had been neglected. However, with every assistance from the Committee and Dr. Roy, the Medical Superintendent, who gives Mr. Falconer every encouragement, this garden has become one of the finest and most up-to-date in the country. Mr. Falconer has made the garden worthy of the Hospital, and produces vegetables, fruits, plants and flowers for the sole use of the patients—a very big task considering the state of the ground. Mr Falconer tackled his problems in such a methodical manner that not only is he able to supply the Hospital with garden produce all the year round, but his many alterations and improvements in the pleasure grounds have tended to improve the health of the patients. Mr. Falconer has become one of our leading exhibitors at the big shows, and during the present season has won several Cups and over one hundred prizes for plants, flowers and vegetables.



MR. A. FALCONER.

German Horticultural Officials in Council.—The annual Conference of the German National Association of Horticultural Officials took place this year at Hamburg, in the Town Hall. The Conference was very enjoyable, largely owing to the fact that Hamburg and Altona contain so many features of horticultural and gardening interest, of which not the least was the display of hardy flowers at the nurseries of Nonne and Höpker. Many subjects were discussed, including horticultural education and examinations, protection of the interests of horticultural state-employees, the growth of the Association, and of its press. Two papers were also read, one by Professor Dr. Reh on the plant diseases prevalent in Hamburg, and the other by the chief inspector of gardens, Heer C. Goebel, on the gardens of Hamburg. The 1928 annual conference will be held in south Germany.

Flower and Garden Pictures.—A two-fold exhibition of paintings was opened at Colnaghi's Galleries, in New Bond Street, on October 14, comprising landscapes and flower pieces by George Thomson, and thirty-five paintings by various well-known British artists, including Augustus John, Sir William Orpen and Sir John Lavery. The Thomson paintings were in oil, but differed greatly from most modern oil-work, being produced by a special process worked out by the artist himself, which is strongly reminiscent of the effects produced by early Italian painters. The process lends itself remarkably well to the production of delicate flower colours, and some of the pieces—notably Begonias (5); Camellias, a warm shade of pink, arranged loosely in a jade jar (13); and a dish of fruit, were especially effective. Apart from flower paintings, one of the portraits, of a Basque peasant girl, was unusually treated, the light having been thrown on the side of the face in such a way that nearly all the features were in deep shadow. A Window in Samer (23), taken from the inside of a room, the bright sunlight from outside touching a vase of homely flowers on the sill and throwing into relief the houses in the road, was essentially a picture that could be lived with. Of the miscellaneous works, Paeonies and Delphiniums, by H. Davis Richter, was well executed. Hyde Park, by Stephen Bone, was somewhat etherealised; it is doubtful whether the colouring would be so clear on an autumn day, though the evidences of sky and trees suggest wind. Gardens on the Loire (Charles Cundall) is photographic, but pleasing, and shows the usual mixture of orchard, flower garden and closely-cultivated kitchen garden so dear to the heart of the French peasant. Algernon Newton's November Dawn, Waterloo Bridge, is only too true to life.

Seedling Potato Trial at Ayr.—Scientific and trade interests were well represented at Alloway on the occasion of the annual demonstration of seedling Potatos raised by Messrs. McGill and Smith. Included in the company were Messrs. A. Main, A. Miller, M. Dickie and G. Gilray, of the Board of Agriculture, and Messrs. D. G. O'Brien, R. M. Laird and E. C. Macnaughton of the West of Scotland Agricultural College. Upwards of one hundred seedlings were arranged in a field for inspection. They were planted on May 20, in drills twenty-seven inches apart, on land which had manure ploughed in last autumn and received a dressing at planting-time of 6 cwts. superphosphate, 2 cwts. sulphate of potash, and 1½ cwts. sulphate of ammonia per acre. With the object of ascertaining the opinion of their guests regarding the merits of the seedlings, the firm invited the company to select by a card vote the best ten varieties in the trials. When the poll was declared it was found that a seedling obtained by crossing the new early variety Herald with Arran Comrade was placed first with a total of 322, while Doon Star, a maincrop variety, which is one of the candidates for registration this year was second with 218. The winner is a first-year seedling which produced 7 lbs. of shapely tubers per root, equivalent to 28 tons per acre. Three seedlings of British Queen and Herald parentage occupied third, fourth and fifth places, while the product of a Great Scot-Herald cross was seventh on the list. At the conference which followed the luncheon, Mr. J. F. McGill expressed the opinion that the pedigree should be given of all Potatos registered with the Board of Agriculture. Mr. Main observed that the standard of stock-purity in the Scottish seed Potato trade was higher than it had ever been and higher than was ever anticipated, while the purity of the tubers that went to England was beyond reproach. That in itself was something to be proud of, while so far as marketing Potatos was concerned, they had advanced further than any other class of agriculture. The next step was soundness. They wanted a Potato that was highly resistant to disease; indeed, they were endeavouring to go further and find out more of the incidence of virus diseases, for if anything could be done to get really outstanding immune varieties then their problems would be much easier. In the meantime they were endeavouring to produce Potatos which were an improvement on old standard varieties. The standard by which the Board of Agriculture tested the seedlings was a very high one, and when a new Potato reached the registration stage it had to be a really good variety. Mr. McGill stated, that in all his recollection he had never known a year when blight was so bad as in 1927, and he estimated the loss in Scotland at one-and-a-quarter million sterling. Mr. O'Brien said blight caused an annual loss to the country of £5,000,000, and in a year like the present it would be much greater. As blight could be controlled to a great extent, he thought they should concentrate their efforts upon it.

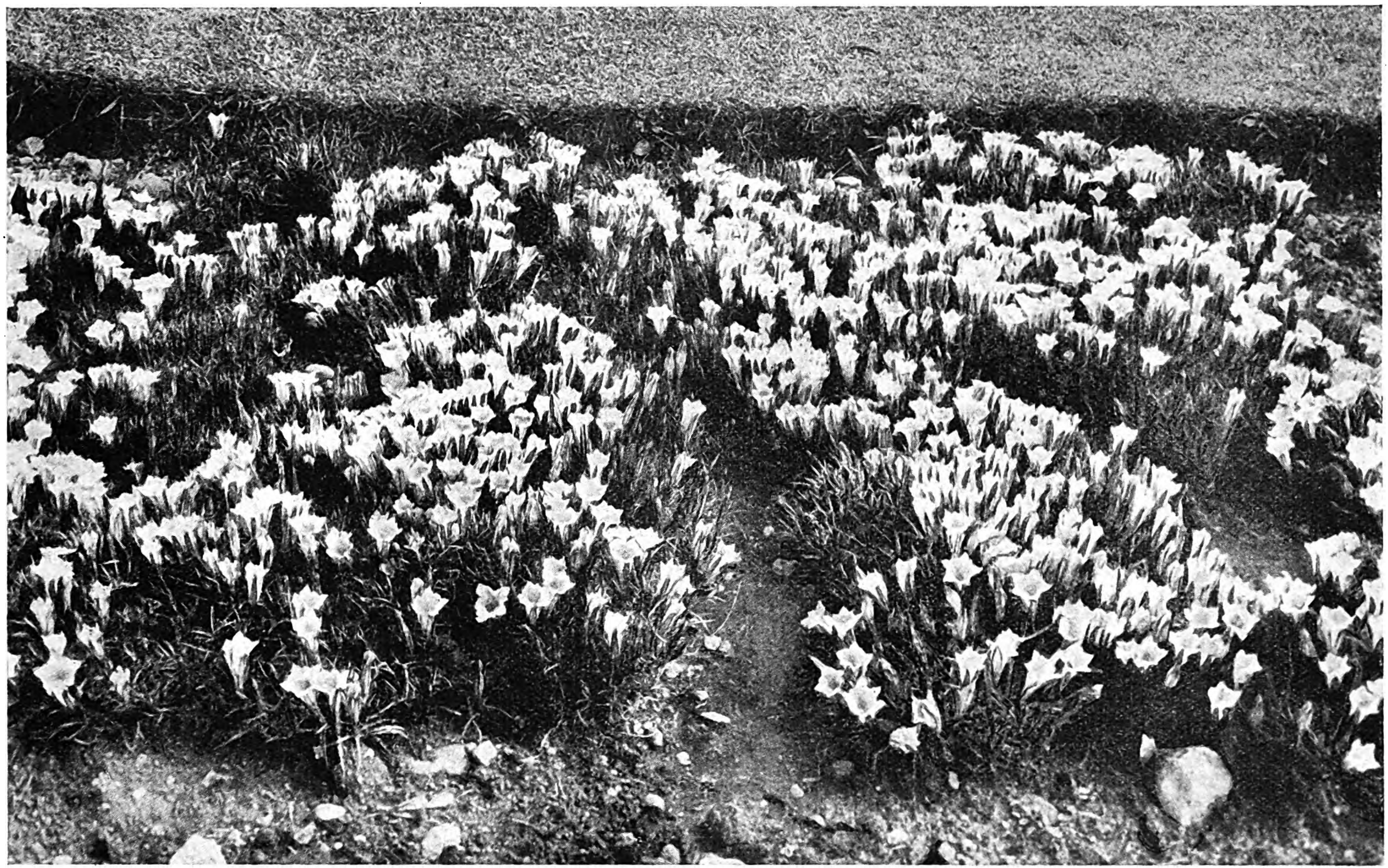


FIG. 141.—GENTIANA FARRERI AT BLINKBONNY.
(see p. 325).

Presentations to Mr. and Mrs. Edward Skelton.—On the occasion of the retirement of Mr. Edward Skelton, chief of the Richmond (Surrey) Gardens and open spaces, the Mayor of the Royal Borough presented Mr. Skelton with a gold watch on which were engraved the borough arms and "Boro. Richmond (Surrey), Mr. Edward Skelton, Borough Gardener 1891-1927." Mrs. Skelton was given a handsome gold brooch. The staff of the Terrace Gardens gave Mr. Skelton a gold albert watch-chain, and on behalf of the Richmond Municipal Officers' Association, the Borough Treasurer presented Mr. Skelton with an oak, chiming, grandmother clock, appropriately inscribed.

Mr. John Cypher, V.M.H.—The many friends of Mr. John Cypher, of Cheltenham, will deeply regret to learn he is suffering from a very severe illness that has confined him to his room for several weeks past. Many kindly expressions of affection and esteem for this fine grower and exhibitor were forthcoming from members of the R.H.S. Orchid Committee on Tuesday last, and at their request, Sir Jeremiah Colman agreed to send a letter of sympathy and good wishes to Mr. Cypher and his daughter.

Appointments for the Ensuing Week.—Monday, October 24: Birmingham Gardeners' Mutual Improvement Association's lecture. Wednesday, October 26: Southampton Royal Horticultural Society's show (two days); French Chrysanthemum Society's Congress in Paris (three days); French National Horticultural Society's show; Sheffield Chrysanthemum Society's meeting; Wimbledon Gardeners' Society's meeting. Thursday, October 27: Holland County Potato Show; London Gardens Guild Lecture. Friday, October 28: Imperial Fruit Show at Belle Vue Gardens, Manchester (nine days). Saturday, October 29: Lancaster Horticultural Association's lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Mandevilla suaveolens.*—In a recent visit to the Botanic Gardens at Montpelier, I observed Mandevilla suaveolens growing over a trellis as a hardy climber. With a view to test the severity of the winter, I inquired what species of Passiflora flourished under similar treatment and learnt that none but P. caerulea would live there out-of-doors; all others which had been tried had been killed by frost in winter. On my remarking that P. caerulea flourished in England, the gardener assured me that Mandevilla was decidedly more hardy; and that where P. caerulea flourished he had no doubt Mandevilla would equally. In accordance with this statement, I observe that a branch of Mandevilla which had grown out through the roof of my greenhouse, is this day (October 18) in perfect flower, having been exposed about ten days to a frost which injured French Beans, Convolvulus major, caused the leaves of Mangold Wurzel to droop, and so damaged flowers of Passiflora caerulea against a wall that they did not expand. I should remark that the greenhouse is span-roofed, so that the Mandevilla was exposed both to wind and radiation without any protection whatever. I mention this to induce others to try Mandevilla, as I intend to do next year against a wall where Passiflora flourishes. I may add that the frosts at Montpelier are occasionally so severe that Cupressus lusitanica was severely injured, and Oranges and Olives killed outright. On the other hand, from the heat of the summer, Nelumbium both flowers and seeds in a tank in the middle of the garden.—*J. R., Gard. Chron., October* 23, 1852.

Publications Received.—*Schädlingsbekämpfung,* by Dr. Walther Trappmann; S. Hirzel, 2, Konigstrasse, Leipzig; price, Rm. 20.—*Latin Names of Common Plants,* by F. Dawtrey Drewitt; H. F. and G. Witherby, 326, High Holborn, W.C.; price, 3/6 net.—*Alte Bürgerliche Gartenkunst,* by Hans Reichow; price, Mk 4; *Saaleck,* by Paul Schultze-Naumburg; price, Mk 4; both published by *Gartenschonheit,* Berlin-Westend, Akazien-Allee 14.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Miltonias.—Miltonias of the Brazilian section, such as M. Binotii, M. spectabilis, and its variety Moreliana, with M. Clowesii and M. Regnellii, produce their flowers during late summer and early autumn. After the plants have flowered and the pseudo-bulbs have finished their development, the supply of water at the roots should be gradually reduced and the rooting material kept on the dry side until growth becomes active again in the new year. M. candida is now developing its flower spikes, and after it has flowered the plant should receive similar treatment. All these Orchids are subject to attacks of red spider, especially during the autumn, therefore, the leaves should be sponged occasionally with a weak solution of some safe insecticide.

M. Roezlii, M. R. alba and M. Phalaenopsis.—These are seldom found in good condition, although their progeny, M. Bleuana and M. Venus, are seen in robust health at the spring and early summer exhibitions. Their constitution is not so strong as in the case of the Brazilian section, and they should therefore receive careful attention. They also require a slightly higher temperature than that section, and as both the species named are now starting into growth and fresh roots are pushing from the base, any necessary repotting may be done at this season. Plants of M. vexillaria, which were potted some time since, and have become established in the new material, should now be removed to an intermediate temperature and placed in a light, airy position. During damp, dull weather, the immediate surroundings of the plants should not be kept too moist, as an excess of moisture may cause the foliage to decay. Water at the roots should be applied sparingly to Miltonias all through the winter months.

Paphinia.—Members of this small genus of low-growing plants are occasionally seen in cultivation. Both P. cristata and P. rugosa should be grown in small pans filled to one-half their depth with drainage material. They are best grown suspended from the roof of the warmest house and shaded from strong sunlight, especially during the summer months. A suitable rooting-medium consists of Sphagnum-moss and fibrous peat in equal parts, on which the plants should be placed, so that the base of the pseudo-bulbs may be on a level with the rim of the pan. As the Paphinias grow naturally in a very humid atmosphere, constant attention must be given to the supply of water, and also to keeping the plants free from insect pests, as these small plants fall an easy prey to attacks of any kind. When the new pseudo-bulbs are fully developed, water must be applied with great discretion.

Coelogyne cristata.—Plants of this species and its varieties have almost finished their season's growth, and when the pseudo-bulbs are fully matured only sufficient water need be given to keep the plants plump and healthy. Arrange them in a light position at the cool end of the Cattleya house. Where kept under cooler conditions, this Coelogyne continues to grow for another three or four weeks, and must be treated accordingly. Other Coelogynes that have completed their growth should not be watered excessively or the roots will decay.

Cypripediums.—Many plants of the cool-growing Cypripediums, both species and hybrids, are sending up their flower scapes and should be given every encouragement to flower satisfactorily. The leaves should be cleaned thoroughly by carefully sponging them with a weak insecticide. As the scapes become of sufficient length they should be tied neatly to thin stakes to prevent them becoming twisted. When used as cut flowers, the stalks should be as straight as possible in order that the blooms may be arranged to the best advantage. As the season advances, the plants should be afforded all the light possible and supplied liberally with water at the roots each time the compost shows signs of becoming dry. Large, pot-bound specimens of the different varieties of C. insigne may receive weak, liquid manure at alternate waterings until the flowers commence to expand; thence onward clear water only should be given. Plants of the summer-flowering section, such as C. l'Ansonii, C. Shillianum and C. J. H. Veitch, may be repotted as they pass out of bloom, should this be necessary.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Cauliflowers and Autumn Broccoli.—As frost is now likely to become more severe, much damage will be done to heads of these useful vegetables unless the curds are well protected by their own leaves. Where plenty of deep frames are available, it is wise to lift as many plants as possible with heads showing, and plant or heel them in, covering the lights on frosty nights. Another good plan is to lift all that are fully developed and hang the plants upside down in a cool, dark shed; under these conditions it is surprising to find how long the heads remain quite fresh. Before placing the plants in position, make quite sure that all caterpillars or grubs are removed, and while they are stored beware of rats and mice. I remember once storing plants in this way for exhibition and finding many heads spoiled by these marauders.

Celery.—A stock of Bracken or straw should be kept at hand ready to protect the tops of Celery. I find that Bean poles, placed in position so as to form a rough trellis over the rows, just clear of the leaves, will hold the Bracken covering admirably; this method allows the easy removal of the covering in fine weather, and is far better than laying the protective material directly on the plants.

Rhubarb.—Where a very early supply is appreciated, a few of the earliest and best matured clumps of Rhubarb may be lifted and left fully exposed to the weather for a little while before taking the crowns into the forcing house. A small amount of fermenting material should be placed in the bins, or on the floor, the roots laid thereon and well packed round with leaf-mould; maintain a humid atmosphere and useful stalks will soon appear.

Endive.—If plants of this indispensable salad are growing outside they must be protected from frost. Where they are fully developed, a quantity may be lifted with as much soil as possible attaching to the roots, placed in a frame, and kept quite dark to blanch perfectly; or they may be placed in a dark shed or Mushroom house. Fill all available frames with Endive plants in various stages of growth. The curled or mossy varieties damp off more readily than the round-leaved sorts.

Parsley.—Where grown outside in exposed positions, Parsley should also be protected during severe frosts. A few poles or battens arranged over the bed, on which mats or tiffany may be placed, answer the purpose well.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Borders for Peaches and Nectarines.—Where it is intended to plant Peaches and Nectarines against newly-erected walls the borders should be thoroughly prepared so that they may be ready when the trees arrive from the nursery. Both fruits require plenty of drainage, especially if the subsoil is of a heavy texture; indeed, it is a good plan to raise the border several inches above the surrounding level, unless the soil is light and porous, overlying gravel, and the climate is good for Peach growing. The borders need not exceed six feet in width, at least for a few years, after which two or more feet of new soil may be added to its width if the roots have reached the previous limit. Good pasture loam, with plenty of old mortar rubble, wood ash and a fair sprinkling of crushed bones, all mixed well together, will suit these fruits; no manure need be added, except where the soil is of poor quality. At the bottom of the border place plenty of old broken bricks or other rough material for drainage, and cover this with turves placed grass-side downwards.

Good Varieties.—A few dependable varieties given in order of ripening are Waterloo, Duchess of Cornwall, Hale's Early, Rivers' Early York, Peregrine, Goshawk, Dymond, Royal George, Stirling Castle, Bellegarde, Barrington and Sea Eagle Peaches. If given a warm position, Princess of Wales will ripen its fruits very well in favourable seasons. Early Rivers, Cardinal, Dryden, Elruge, Pineapple, Humboldt and Albert Victor are all good Nectarines. There are other good varieties of each fruit but those named will usually give satisfaction and rarely fail to crop.

Sweet Cherries.—In all gardens where Sweet Cherries are given reasonable attention the trees generally give a good return for the labour bestowed upon them. When preparing the ground for the reception of the Cherries, see that the drainage is good and the soil durable. A west aspect is the best for these fruits, if grown on walls, and the trees should be trained fan-shape, although grand crops of large Cherries may be grown on cordons planted three feet apart. Varieties should be chosen to ripen in succession and thus maintain a supply for so long as possible. Early Rivers, May Duke, Waterloo, Bigarreau de Schreken, Black Heart, Frogmore Bigarreau, Kentish Bigarreau, Napoleon Bigarreau (one of the best), and Black Heart make a suitable selection.

Top-dressing.—This work is best carried out at the present time. Remove the old soil to a good depth, taking care to preserve the roots; after cutting the ends of damaged portions, relay the surface roots in good soil and follow with a mulch of manure, especially where the old soil has not been renewed for several years. Fruit trees will improve in condition rapidly when once the roots have taken to the new soil.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Chrysanthemums.—Many blooms of the large-flowered Chrysanthemums will be nearing maturity, and it is at this stage a little extra care is needed, especially when applying stimulants to the roots. As a rule, when the flowers are three parts open no more feeding is necessary, but discretion must be used in treating different varieties. The stronger-growing sorts will need more feeding to develop their flowers than those of a weaker growth that generally produce clean "kind" buds. Although many Chrysanthemum flowers are ruined by overfeeding after the plants are housed, others fail to develop because of insufficient feeding. To produce exhibition flowers of a high standard feeding is absolutely necessary. Although care is needed with regards to watering, it must also be borne in mind that the plants must never be allowed to suffer through lack of moisture at the roots, otherwise the florets of the flowers will flag and damping will follow. As the flowers develop less air will be needed; but, at the same time, a close atmosphere must be guarded against. Keep the top ventilators open day and night, more or less, according to outside conditions; during foggy weather the hot-water pipes should be sufficiently warmed to keep the air moving and dispel damp. Watering should be completed early in the forenoon so that the surroundings may become dry before evening. Earwigs should be sought for during the evening; they are easily caught by the aid of a strong light.

Late-flowering Chrysanthemums.—These should be grown under the coolest conditions possible to obtain flowers for use during the early months of the new year. Guard against over-feeding or the growths will become sappy and fail to produce flowers of good substance. These late sorts will be found most serviceable where disbudding is resorted to, either partially or severely, according to the variety.

Campanula pyramidalis.—Plants of the Chimney Campanula raised from seeds as advised in a previous calandar, and which are intended to be grown for conservatory decoration, should be placed in their flowering pots, after which the pots may be plunged in ashes in a cold frame, where protection may be given during severe weather. Receptacles seven inches in diameter will be suitable for these Campanulas. Canterbury Bells are also useful plants for the conservatory and may be treated somewhat similarly.

General Remarks.—At this time of year when accommodation is sorely needed for winter-flowering and spring-flowering plants, it becomes necessary to discard plants that are of no particular value.

Early Bulbs.—Paper White Narcissi and Roman Hyacinths should be examined and if sufficient growth has been made they may have the covering material removed and be stood in a cool frame, where they should be shaded for a few days before finally exposing them to full light.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Peaches.—By the time these notes appear all Peaches will be over and next year's crop will greatly depend upon the treatment the trees receive through the remainder of the autumn. It is a mistake to think that drought at the roots ripens the wood; indeed, when the time arrives for root-lifting, the careless grower will find that the trees have not received more than half the water they required. If the borders are properly made and drained, it is almost impossible to overwater old Peach trees after the fruit is gathered and all the ventilators are open. It is rather late to restore trees that have not had sufficient water, but where there is any doubt, no time should be lost in trying to set matters right. These remarks apply to early and late houses and to trees that suffer from bud-dropping in the spring.

Pruning.—Trees in early and mid-season houses will have been pruned, so far as cutting out superfluous shoots furnished with foliage can be done. Late trees should also be pruned without loss of time, allowing five or six inches between the growths. All the shoots retained and especially the leaders on extension-trained trees, should be left their full length. It is not necessary to cut close back, as the final pruning may be done when the trees are detached from the trellises, the object now being to let in light and air.

Borders.—Any borders in which the trees are making either too strong or very weak growth must be taken in hand and dealt with accordingly. If growth has been too strong, root-lifting and replanting in open, calcareous loam are the best remedies, and the firmer the compost is rammed the better. If growth is weak, owing to age or overcropping, the borders may be watered with diluted liquid manure, and top-dressed with good loam, soot, bone-meal and lime-rubble. Manure may be used in extreme cases, but generally the weakest trees can be restored by mulching, top-dressing and summer feeding. The new compost can hardly be used in too dry a condition, nor can it be made too firm. When the borders are finished, apply tepid water freely to encourage root action. If kept too dry the roots remain dormant through the winter, but if properly moistened, a careful examination will reveal new roots in the course of a few weeks.

Compost.—Advantage should be taken of fine, dry weather to lay in a good stock of old turf for use through the coming season, especially if it be of a heavy, tenacious nature. The preparation of soil often entails a great deal of wheeling, and the whole of the heavy work should be pushed forward when the soil is dry and warmer than it will be later. Opinions differ as to the proper depth of borders, but on well-drained sites two feet is ample if thorough watering is given when the fruits have set and are swelling freely.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Lobelia fulgens.—There are several fine varieties of Lobelia fulgens, and they often prove difficult to keep through the winter; in certain soils and situations the roots may be safely left in the ground, especially if they are covered with ashes. As a rule, however, it is wise to lift the roots and store them in cold frames for the winter; for this purpose pack them into boxes with some light, sandy soil. They may often be successfully wintered at the foot of a warm wall. L. fulgens and its varieties are generally confused with L. cardinalis, which is a very distinct plant with green leaves and by no means common in cultivation.

Montbretias.—Choice, named varieties should be lifted and placed in boxes, in which they should be stored in cold frames for the winter, increasing them by means of the stolons during the spring; by this means the finest results are obtained. The stolons should be detached and potted up separately or, if grown in quantity, they may be placed in other boxes of light, rich soil and planted in their flowering quarters at the beginning of May.

Schizostylis coccinea.—S. coccinea and its pink variety, known as Mrs. Hegarty, are both excellent for a display during September, October and November, especially when planted in a warm border in front of a wall. They are excellent for furnishing a supply of cut flowers and are easily protected from slight frosts. During the summer they enjoy plenty of water at the roots. The pink variety seeds freely and in my experience comes true from seeds. Planting or replanting is best done during the spring.

Reserve Garden.—Where a supply of cut flowers has to be maintained, plants suitable for the purpose should be grown in the reserve ground. Many bulbous plants are valuable for this purpose, including Narcissi, Tulips and Irises. The bulbs required for cut flowers should be planted in good time; the reserve garden may also be used for testing new varieties before they are planted on a large scale for bedding purposes.

Iris.—Both Spanish and English Irises are very useful, not only for bedding purposes, but also for furnishing a supply of cut flowers. As bedding plants, they have the disadvantage of flowering rather late, and for this reason they are best used in odd beds where they may be replaced by early Chrysanthemums, or some subject that may be grown on in pots. The newer Dutch Irises flower about ten days in advance of the Spanish varieties, and on this account they have a distinct advantage for bedding purposes. The Spanish varieties do not, as a rule, last long, except on very favoured soils; the English varieties are, however, long-lived, and increase when left in the ground. For this reason they are well suited to planting in clumps in the mixed or herbaceous border.

Sweet Peas.—Seeds are best sown from the middle to the end of October. Very early sowing is a mistake, as the resulting plants do not winter well. Many advantages accrue from autumn sowing, provided the situation and local conditions admit of successful wintering; unfortunately, in many localities it is almost impossible to bring seedlings safely through the winter, especially in damp, low situations, where slugs prove very troublesome. The best results are usually obtained in open positions on warm, well-drained soil. Where outdoor conditions present difficulties it is a good plan to make a sowing towards the end of October or beginning of November in cold frames, keeping the seedlings perfectly cool during the winter and removing the frame lights on every favourable occasion.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Bowling Greens.—Where any repairs are necessary the present month is a most suitable time to carry them out, and when completed the application of a suitable fertiliser, such as blood manure or finely-ground bone-meal is recommended. This should be evenly distributed over the surface of the green during dry weather, and brushed in, after which a coating of sea-sand should be spread over the manure and carefully levelled by using a wooden tool made for the purpose. When the greens are mossy, the moss should be removed by scarifying the surface with rakes, or by using the moss extractor sold for dealing expeditiously with this trouble, but in order to get rid of the moss permanently the greens should be pierced at regular intervals of a few inches apart, and deep enough to reach the sand on which the turf is laid, usually about three inches; this work is performed by using a tool resembling a short, blunt digging fork, and occupies a considerable time if done thoroughly. The results, however, are usually very satisfactory, as the turf is thoroughly aerated, and by the time the playing season comes round again the holes have filled up and the fresh young grass forms a perfect surface. The banks also require attention when subsidences have taken place, and they must be brought up to the regulation height above the greens, while the ditches around the green should also be trimmed and a fresh coating of gravel or other material placed therein.

Chrysanthemums.—The later varieties of Chrysanthemums should now be ready for placing under cover, but nothing is gained by removing them until the buds are well set, and, so long as frost keeps away, they are better left out-of-doors. They should, however, be so arranged that they may be readily protected at short notice when frost threatens. The earlier varieties which were housed some time ago must be well supplied with stimulants such as liquid manure, or light top-dressings of an approved artificial manure, until the blooms begin to show colour. Keep a close watch for green fly or other insect pests, and fumigate accordingly. Where the leaf-miner is troublesome good results have been obtained by fumigating with the preparation known as Auto-shreds, and, so far as observed, not the slightest damage is done by this fumigant to the tenderest foliage, while its penetrating fumes appear powerful enough to kill the leaf-miner embedded in the leaves. Cinerarias also may be safely fumigated by this preparation without danger of disfiguring the foliage.

Cyclamens.—The old corms which were re-potted in July are now growing more freely; so soon as the roots have reached the sides of the pots they may be watered more frequently, and when well rooted should be given a little extra feeding occasionally. These older plants are sometimes attacked during the autumn months by a grub or maggot that works in the soil and is not readily observed until the foliage begins to flag; examination then shows that the roots and sometimes the base of the corm have been eaten. To prevent the attack from spreading, or to kill the grubs before too much damage has been done, water the plants two or three times with lime-water which has been prepared by placing a quantity of ground lime in water and allowing time for it to settle, using only the clear lime water. Young plants which are beginning to show flowers should have these removed, and if they also have well-filled their pots with roots, an occasional watering with soot-water and diluted liquid manure will assist them to grow vigorously and produce healthy foliage.

TREES AND SHRUBS.

LAVENDULA STOECHAS.

THOUGH a native of the hot, dry slopes of the hills bordering the Mediterranean, this Lavender has survived two or three winters here and is now blooming. It grows about two feet tall and the leaves, which are broader than those of the common Lavender, are rather more than an inch long and pale grey-green on both sides. In its native south where there is more sun, they are very much greyer. The flowering stems rise erect to a height of some six or twelve inches and terminate in a dense, four-sided, cone-shaped inflorescence. The true flowers are a very deep purple, almost black, but the sterile bracts which surmount them are a rich purple. But these bracts, which may be over an inch long and fully half as wide, vary a good deal in shade of colour in the wild plants, some of them being a pale mauve, others approaching a sumptuous violet, with intermediate tints. There is also a variety with pure white bracts, but this I have not seen. L. Stoechas is often extremely showy in its native haunts, and if it proves hardy enough for dry sunny spots in favoured parts of this country it should be a useful little shrub. It would be interesting to know how other readers have succeeded with it and to what extent it can resist frost.

BUDDLEIA ALTERNIFOLIA.

IT would be interesting to hear the candid opinion of others upon this shrub, for while there are some who extol its qualities with unrestrained fervour, not a few hold their peace when they do not "damn by faint praise." I belong to the latter company and may have been unfortunate, but I have not yet seen B. alternifolia make anything like the effect one is led to expect. Again, I read the other day that B. alternifolia was the ideal shrub for the small garden, but my own experience of it leads me to believe that it will eventually grow larger than any of the better-known hardy species. One specimen here has made strong upright shoots nearly ten feet long in a single season, and it has flowered so feebly that I am contemplating removing it in favour of something better. Yet B. alternifolia is a shrub of such superlative elegance of habit that, given plenty of space and a generous crop of blossom, it should make a most inspiring object. *J.*

ESCALLONIAS.

THIS genus contains many handsome shrubs, of which all are more or less evergreen, with the exception of E. philippiana. They are more or less tender, except in the milder districts where they make beautiful specimens in the open; in the colder counties many thrive if given the protection of a wall. Two kinds that contribute to the floral display in the garden during September are worthy of special note.

Escallonia exoniensis is a rapid-growing plant with shining green leaves, and attains a height of ten to fifteen feet or more in favoured districts. The flowers are borne in terminal panicles, and vary from very pale rose to pure white, and are produced with the greatest freedom from June to September. This is a much hardier shrub than most people imagine it to be, for it will withstand severe weather when many others are killed by frost.

Another fine Escallonia in bloom at the end of September is E. montevidensis, and without doubt this is one of the best of this genus. A native of South America, it is only in the milder and more favoured districts that we see it at its best in the open. I have recollections of specimens growing in a district more favoured than some parts of Surrey, and where the plants were the joy and pride of the proprietor and his gardener every autumn. We cannot all succeed with this shrub in the open, but it is well worthy of the protection of a wall, where, in an average season, it will winter safely. The Wisley plant is growing against a wall facing north, where it was an object of great beauty for several weeks, with its large, rounded trusses of white flowers and its bright green foliage.

E. macrantha, a common shrub in southern and western maritime districts, where it can be used for forming hedges, is most attractive, as its rosy-crimson flowers are produced in endless profusion; the foliage is of a shining green and very ornamental. Even if the plant is cut down by frosts it will usually grow away again with great vigour from the ground level. I recently examined some examples growing in the open in an exposed part of a garden in north Norfolk; the plants were killed to the ground level during the winter of 1917, but are once again beautiful specimens. E. langleyensis is a hardy kind and will survive all but the severest winters; it has a graceful, pendulous habit, making a bush from five feet to seven feet high and covered during June and July with rich, rosy-red flowers, which are freely produced. E. Donard Seedling is becoming a well-known variety, although of recent introduction; the flowers are pale pinkish-mauve; it is a rapid grower and soon forms an attractive bush.

E. philippiana, the hardiest member of the genus, is more or less deciduous; it is quite a distinct shrub, bearing white, fragrant flowers in great profusion.

Of the Escallonias that are furnished with resin glands on the leaves and branches, mention may be made of E. illinita, an evergreen species, bearing white flowers. This is said to be hardy but was killed to the ground level during 1925-26 at Wisley. Known to many as the Pig Plant, this Escallonia has the peculiarity of emitting an odour which is suggestive of a pig-sty; so strongly odorous are the shoots and leaves that they will retain the odour for months after they have been dried. It seems, from observation, that the peculiar odour is most freely emitted during dull, damp days, especially during the latter part of summer and autumn. *R. F., Wisley.*

PLAGIANTHUS LYALLII.

KNOWN in New Zealand, of which country it is a native, as the Lacebark, this semi-deciduous plant grows naturally to a height of from twenty to thirty feet, though it seldom attains to more than ten feet in this country. Its young growths are covered with silvery down, but they become dark brown and furrowed with age. The leaves are usually semi-persistent, remaining in clusters at the ends of the growths. They are heart-shaped, bright green in colour and slightly downy, with deep, doubly-crenated margins, slightly tapering apices, and downy petioles an inch or more in length.

The flowers are produced in drooping axillary clusters on stalks about an inch long. The corolla consists of five concave, pure white petals, while the clusters of stamens are yellow-anthered, thus increasing the attractiveness of the blooms. Plagianthius Lyallii should be planted in a warm, sheltered position, or given the protection of a wall, in well-drained loamy soil. It may be increased from cuttings or layers. *A. G. F.*

THE HEATH GARDEN.

(*Concluded from p.* 311).

ERICA TETRALIX comes next; this is the common Cross-leaved Heath found in all parts of the country, and very often in very wet places, with large pink flowers. There are several varieties, including two or three white ones—the best being E. T. alba mollis, with silvery-grey foliage (this gained an A.M., R.H.S., just lately). There is E. T. Mackayi, and its double form, which is very pretty; both have deep pink flowers.

Erica vagans, the Cornish Heath, follows. This has several varieties, one of which, E. v. Mrs. D. F. Maxwell, is, in my humble opinion, the best of all. I congratulate the introducer, Mr. D. F. Maxwell, the Heath expert of the Broadstone Nurseries, on his find. I read its history in his delightful book on Heaths, *The Low Road*, but having lent this to a friend, I am unable to verify the facts, but I think he found it at Helston, in Cornwall, on a bank, whilst picking Mushrooms—having got wearied of looking for an outstanding variety. It is a plant that should be in every garden, and has flowers of a rich cerise colour. With all due deference to that well-known artist, Miss Winifred Walker, I do not think she has done the plant justice, but it may be the printer's fault, for my recollection of the coloured illustration in the book referred to is that it is decidedly dull and drab looking, whereas the plant in real life is not.

The second best plant is E. v. St. Keverne, found by that great gardener and charming gentleman, Mr. P. D. Williams, of Lanarth. This plant has soft rose-pink flowers, without a suspicion of blue in the pink, and is a very charming Heath. Like the previous one, it should be in every collection, and plenty of it. Another new variety that came to me through the Broadstone firm is E. v. Lyonesse, and this is far and away the best of the white forms. There are also E. v. carnea, pink flowers; E. v. grandiflora, with pink flowers in a long spike and of loose habit; E. v. pallida, pale pink; E. v. rubra, deep red. These varieties carry the brown, dead, flower heads throughout the winter and are quite attractive then.

The last of the species is not an Erica but Calluna vulgaris. This is the Common Ling, and there are many varieties of it. For a long time I was under the impression that E. cinerea was the Scotch Heather, but I found that the Ling in England becomes Heather in Scotland. There are many white forms, only three or four being really distinct. The best are C. v. alba Serlei, which flowers latest of all the white forms; C. v. a. Hammondii, which grows rather upright and into big bushes with rich green foliage; C. v. Alportii, that has bright crimson flowers and is of rather upright habit, with a sort of purplish tone to the foliage; C. v. fl. pl. has double flowers of a mauve-pink shade. I find the habit somewhat straggly.

There are several other forms, but many are still rare and others are too much alike to trouble about, but the following are worth growing:—C. v. aurea, which has the ordinary purple flowers but the foliage is golden-yellow, becoming deeper in winter, and for this reason it is worth its place for winter colour; C. v. cupraea is, perhaps, better still, but on the shady side of the plant the winter colour is lacking; the general tone is, as the name denotes, copper colour.

Then come three dwarf forms, two, if not all, of which may be used for covering the paths in the Heath garden. The dwarfest is C. v. minima, growing only about two inches high; C. v. Foxii nana, slightly bigger; and C. v. pygmaea, which grows up to about six inches. They are rather shy in flowering, hence their use for the paths, which can also be planted with Thymus serpyllum.

There are some hybrid Heaths but still scarcer, chiefly of E. ciliaris and E. Tetralix blood, which the Heather specialist may get to complete the collection, as well as E. scoparia and E. stricta, both tall growing. The former is grown as a foliage plant as its greenish-brown flowers are of no value. The latter has pink flowers which appear spasmodically during the summer, but both are more of botanical than garden interest.

Many dwarf shrubs that delight in the ideal Heath soil may be grown in the Heath garden, chief among them would be the dwarf Rhododendrons of the Lapponicum section, which in their native land, take the place of Heather on the mountains and moorlands. Most of these have flowers of blue, mauve or lavender shades, and bloom very freely; Andromeda polifolia, with its pink, drooping bells; some of the dwarf Azaleas, although I should prefer them to have slight shade for some part of the day in the hottest part of the year; Gaultherias in variety; Ledums and Pernettyas—in all the different coloured forms obtainable. Daboecia polifolia, the St. Daboec's Heath, should, I suppose, have been included in the list of the Heaths, but it is not an Erica or even a Calluna, so has been kept apart. There are white, purple and bicolor forms.

And now I think my list is exhausted, but what genus can give such a show over such an extended period and at such little cost after the initial expense?

If space allows, plant some double Gorse about the Heath garden, and, on the sheltered side, Erica australis. *Erica.*

GENTIANA FARRERI.

The photograph reproduced in Fig. 141, p. 321, shows Gentiana Farreri growing in my garden in Perthshire. The plants were raised from seeds sown in the spring of 1925. Some of the plants flowered last year, but during the present summer they have increased in growth very much, as shown by the photograph, which was taken early in September. These plants were raised from specially selected seeds taken from plants which have very large flowers, with the result that nearly all of the seedlings have given exceptionally large blooms.

When raising the species from seeds, I find a great variation in the colour of the flowers, from very light to dark blue.

Gentiana Farreri requires a much more moist soil than that in which G. sino-ornata will grow. For the last four or five years I have been experimenting in growing G. Farreri in different parts of my garden, and find it succeeds and flowers best in full sun, but in soil that is always moist, even in a very dry summer. The plants illustrated are growing on the level, in a peaty soil which is full of stones that ensure good drainage. Some growers of this Gentian find that the foliage of their plants turns brown before the flowers open; but I think if they were to grow it in a moist, well-drained soil they would succeed much better. G. Farreri should always be raised from seeds as the seedlings have a far better constitution than plants raised from cuttings, and it is very interesting to see the variations in the way of colour and size of bloom.

Seeds sown in early spring will germinate very freely in about ten days, and if the seedlings are pricked out into boxes and finally planted out by the end of May, most of them will flower the following autumn. *A. Harley, Blinkbonny, Kirkcaldy.*

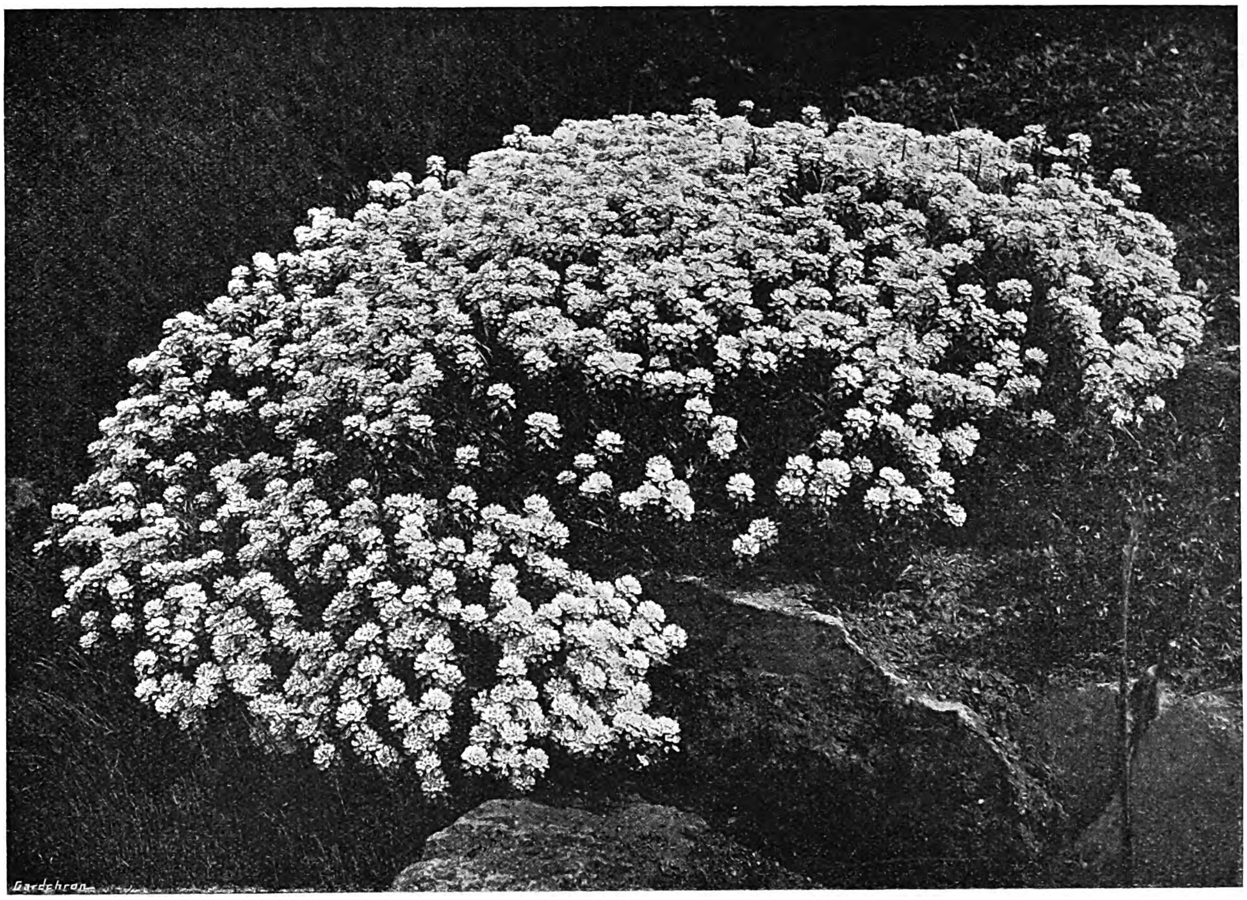


FIG. 142.—IBERIS SEMPERVIRENS VAR. GARREXIANA.

ALPINE GARDEN.

IBERIS SEMPERVIRENS VAR. GARREXIANA.

The evergreen Candytuft is a very popular garden plant and is useful alike in the rock garden and the flower border. There are several varieties in cultivation, and the one named Garrexiana is, perhaps, the best for general use because it does not spread so much as certain others. The heads of white flowers are not so large as in the case of some other Candytufts, but they are produced very freely in spring, and as the flowering season advances the flower stems elongate. Iberis sempervirens var. Garrexiana is fine in the mass (Fig. 142), and as propagation may be effected by means of seeds, layers and cuttings, there should be no difficulty in obtaining sufficient plants for a large group once a specimen is established. Cuttings and layers, however, provide the best means of keeping the plant true.

Some little confusion has arisen in regard to the varietal name, as I. Garrexiana (the evergreen form) is sometimes described as a species, or possibly a hybrid between I. sempervirens and I. saxatilis, although Kew considers it a form of I. sempervirens. There is also another Garrexiana (I. Garrexiana, Scop.), but this is referable to I. saxatilis.

CALCEOLARIA PLANTAGINEA.

Some flowers which are of high beauty, appear destined to be forgotten unless they are offered in current catalogues, and of such Calceolaria plantaginea is one. It has received high praise from that keen critic of alpines, the late Mr. Reginald Farrer, and has been appreciated by those of us who have grown it. From what Mr. Farrer states in his *English Rock Garden,* it ought to be quite capable of withstanding our seasons. He wrote: "It is absolutely hardy in any decent soil or situation."

Notwithstanding this verdict and its own charm of appearance, C. plantaginea is rarely listed in catalogues now, and in private gardens, where it was wont to be found, it is no longer visible, having succumbed to some cause or other. The writer has had it several times but has not found it easy to retain, even though in favourable conditions, and this is no uncommon experience among his friends and other correspondents. This is not only to be regretted but it is a matter for surprise, as it is a native of cold, wet places in Patagonia and Terra del Fuego, and surely ought to thrive with us. With me it succumbed in winter or spring, and possibly its demise was hastened by, if not altogether due to, slugs, which are fond of its foliage and injure it badly. The leaves are large, glossy and very ornamental, with very pronounced corrugation, and in late summer the plant produces sprays of yellow flowers on a foot or more in height.

Where one has failed to retain this Calceolaria it would be foolish to advise regarding treatment, but I still do not despair of succeeding with this capital plant in some cool spot, comparatively free from the ravages of slugs. *S. Arnott.*

TWO ALPINE KNOTWEEDS.

Two dwarf Polygonums from the Himalayas rank high amongst alpine plants on account of their floral beauty; these are P. affine and P. vaccinifolium. They are both distinct in habit and very free-blooming during September and October, and are therefore doubly desirable on account of their late blooming habit. Both are hardy if planted in suitable positions and flourish in ordinary loamy soil, while they are easily increased, the former species by division and the latter by cuttings, which, if rooted during the summer and wintered in a cold frame, will provide plants for planting into permanent quarters in the spring.

P. affine is of rapid growth and soon forms dense masses of practically evergreen, rich green, spathulate leaves that arise from a woody prostrate rootstock. Its flowers are bright rose in colour and are produced freely in dense terminal spikes about three inches in length, borne on slender, sparsely-leaved stems from six to eighteen inches high, the small, cauline leaves arising from the base of slender, brown, membraneous sheaths. This Knotweed is useful for massing on rocky, sunny slopes.

P. vaccinifolium is of entirely different habit. It forms a close mat of long, woody, trailing growths which are closely covered with small, elliptic, rich-green, persistent leaves. From these trailing growths hosts of leafy flower stems arise, six inches or so in height, terminated by slender, compound spikes of small rose-pink flowers, slightly paler in colour than those of P. affine. This species is most effective if planted in a sunny but sheltered position, where it may drape or trail over rocks. *A. G. F.*

LINUM MONOGYNUM.

I HAVE grown this beautiful New Zealand Flax for a good many years and it has never been other than delightful and easy to manage. Though it is apt to die off in winter when growing in damp soil, it is a sound perennial on any really well-drained rock garden ledge. As old plants are liable to get worn-out, frequent division is desirable, but seeds are yielded in such quantity and these germinate so easily that a plentiful stock of young plants is always available from this source. L. monogynum makes a dense but elegant sheaf of slender, glaucous, green, leafy stems about fifteen inches in height. These terminate in clusters of large, snow-white flowers, and a succession is maintained almost throughout the season. This is a first-rate rock garden plant, and in a really dry soil it will withstand at least 15° to 20° of frost without serious injury.

HELIANTHEMUM LIBANOTIS.

THIS is such a charming and very distinctive Sun-rose that one is surprised that it is not more often seen in gardens. It is allied to H. umbellatum (often erroneously called H. rosmarinifolium), but the very pale green leaves are even narrower than they are in that delightful species, nor does the plant appear to grow quite so tall. With me, growing on the top of a dry, retaining wall in full sun, H. Libanotis makes a semi-trailing, loose-habited shrub of a foot, or rather more, in height. The flowers are fully twice as large as those of the allied species named, and of a lovely shade of clear yellow. They are produced singly, or in twos and threes, at the ends of the very slender branches from late May onward for several weeks. H. Libanotis is certainly one of the most delightful of all species of its race in its own colour and it appears to be quite as hardy as any of them. *A. T. J.* [See pp. 334, 335.—EDS.]

PHLOX SUBULATA.

AMONGST the dwarf, early-flowering Phloxes, P. subulata and its varieties provide a group of exceedingly useful plants suitable alike for the rock garden, wall garden, or as an edging to the border. Of free growth and creeping habit, they form thick, carpet-like, evergreen masses, sometimes so much as two feet through, which are pleasing at all seasons and during the flowering season, from April till June, the foliage is almost hidden by a multitude of bright blossoms, thus making a most attractive display.

The plants are not very exacting as regards soil, but thrive best in a well-drained loam, while soils of a very retentive nature may be made suitable by the addition of sand and leaf-soil or similar material. They also succeed in almost any position, provided they are free from the influence of overhanging trees. Large clumps are liable to suffer from damp during the winter, and care should be taken that leaves do not collect in them. It is an easy matter to maintain a young and healthy stock, however, for cuttings root very freely if they are inserted in sandy soil soon after the flowering period and given the protection of a cold frame for a short time. They should be exposed so soon as roots have formed, when they soon make strong plants, which may be transferred to their permanent positions during the following planting season.

The flowers of P. subulata are rose-coloured with a dark eye, while of the numerous varieties, which cover a fairly wide range of colour, the following are worthy of mention: G. F. Wilson is a beautiful, free-growing plant with attractive mauve-coloured flowers; Leila has pale, rose-grey flowers with purple eye; Lilacina is a free-flowering variety with greyish-blue flowers; Moerheimii is a compact-growing plant with bright, pink flowers; Nelsonii has cushions of moss-like foliage spangled with white flowers, with a tiny, pink eye; Sprite has rose-coloured flowers with a crimson eye; and Vivid, which is probably the most attractive variety of all, and has warm, salmon-rose flowers of great beauty. *P.*

FLOWER GARDEN.

GAZANIA SPLENDENS.

HAVING seen this Gazania in some of the public gardens in the Isle of Thanet, I was impressed by its value. The soil and climatic conditions evidently suit it. I saw it in quantity in various positions, and always healthy and flowering profusely. It was used as a carpet plant between Tamarix on the coast, and on the rock gardens it was a conspicuous subject. Beds of Antirrhinums in the Winterstoke Gardens were edged with wide belts of Gazania splendens, and in another instance it was planted around the lamp standards near the approach to a public hall. In every case the effect was pleasing, and visitors had an opportunity of estimating the value of this somewhat neglected plant.

Gazania splendens was formerly grown in many gardens as an edging plant and for furnishing the fronts of window boxes. Although a sun-loving plant, it has flowered profusely during the present season, and the large, Marigold-like flowers, produced in masses, have been conspicuous during a summer when brightly-coloured subjects have in many cases suffered from an excess of moisture. There is a variegated form also worthy of cultivation. Gazanias may be increased from cuttings inserted in sandy soil during the autumn. *C. Ruse.*

BULB GARDEN.

ALSTRÖMERIAS.

THE Alströmerias comprise a small genus of tuberous-rooted plants of distinct beauty and considerable decorative value, both as border plants and for cut flower purposes. As most kinds are natives of South America some doubt exists as to their absolute hardiness, but on well-drained soils they may be considered quite hardy.

The essentials for successful cultivation are a deep, well-worked soil and an open sunny position. A not infrequent cause of failure is shallow planting, hence the advantage of a deep, well-worked soil where the tubers may be covered to a depth of six inches or eight inches and there is no danger of water-logging. Alströmerias resent disturbance, and generally do not attain their full beauty until the second or third year after planting. They should therefore be left undisturbed for several years or until they show signs of deterioration through overcrowding, when they may be lifted and divided. Lifting affords an opportunity for increase of stock, but plants may also be raised easily from seeds.

A. aurantiaca is the most widely grown species; it has rich orange-coloured flowers, spotted with red, and is probably the best of the genus. A. chilense varies in colour from orange to deep red. A. lutea has yellow flowers. *A. P. C.*

THE LARGER-FLOWERED TULIP SPECIES.

THE larger and more showy Tulip species possess a very real garden value which may be turned to good account if only they were more easily obtainable in quantity. I well remember reading an eulogy by that lover of bulbous plants, the late Rev. Joseph Jacob, upon a long border of T. praestans which he had seen in full flower in the Zwanenburg Nursery, Holland. Even to imagine such a feast of colour is wholly pleasant, and to actually visualise such a display must be to witness something incomparably sensational in its intensity.

However, such species as may be obtained at reasonable rates are well displayed on a rock garden or in a border devoted to choice bulbs, where little colonies will render an excellent account of themselves.

Tulipa Kaufmanniana is, of course, easily procurable, and is a choice and well-known species; it is a variable flower, usually with a ground colour of palest primrose, sometimes with flames of carmine on the exterior of the perianth and the same colour round the yellow base; this same base is gloriously displayed by the open "Water-Lily-like" flower—a sunset suffusion of orange and yellow. T. K. aurea is deep yellow, and T. K. coccinea is bright scarlet with a yellow base. There are several other more or less distinct and wholly desirable varietal forms of this fine Tulip. T. Kaufmanniana came from Central Asia in 1877, and is figured in *Bot. Mag.*, t. 6,887. It is early-flowering.

T. Greigii is a gorgeous Tulip, introduced from Turkestan in 1873, and has never been very plentiful; a distinctive feature of this species is the chocolate markings displayed by the broadly-oblong, glaucous leaves. The perianth is coloured an intense flame-red and possesses a dark base bordered with yellow; the stigma is large, the anthers bright yellow, and the peduncle pubescent. This magnificent species flowers in April.

T. Fosteriana, introduced from Bokhara, is intense vermilion, a wonderfully coloured and noble flower; there is variation in the basal colouring, some flowers having dark bases and others pure yellow.

T. Eichleri bears some similarity to the foregoing species; the colouring of the large flower is bright crimson-scarlet with a black blotch spread over the whole claw of the perianth segments and bordered with yellow; it flowers, with T. Fosteriana, in April and May, and somewhat resembles T. Gesneriana, the chief point of difference being the pubescent peduncle, not present in Gesner's great Tulip. T. Eichleri was introduced from Georgia so long ago as 1874, and is figured in *Bot. Mag.*, t. 6191.

T. praestans was introduced from Bokhara in 1902, and is a singularly striking species with very light, bright green foliage and brilliant vermilion flowers, several on a stem; it flowers in April.

T. Oculus-solis is very near to and possibly synonymous with T. praecox, and is a very fine, bold-growing Tulip from the South of France, and Italy, whence it came in 1825; the segments are bright red, with a black blotch that is bordered with yellow; the flower is supported by a stout stem. It is a very desirable plant.

T. Mauritiana is an attractive species with a bright red flower and a yellow base; the flowers are unusually persistent and the species is a "good doer." It is probably a variety of T. Didieri.

T. Gesneriana is a variable species. The type has a large perianth, campanulate, the segments sometimes bright red with a very obscure basal blotch. The quaint and variable Parrot Tulips are referred to T. G. dracontia. The form sold as T. G. major is a magnificent garden Tulip. T. fulgens is a scarlet species with a yellow base and yellow stamens.

T. Kolpakowskiana is also a variable plant, the colour of the segments ranging from bright scarlet in some forms to bright yellow in others, with a basal blotch of black and yellow. A pretty variety, has deep golden-yellow flowers, shaded externally with rose. T. Kolpakowskiana flowers in April, and is a very fine and very old large-flowered species; it was introduced from Central Asia so long ago as 1577 and is figured in *Bot. Mag.*, t. 6,710.

T. Hagin has dark, brick-red flowers, occasionally tinged with yellow, on stems fourteen inches to sixteen inches long; the flowers possess black and yellow basal blotches.

T. Sprengeri is one of the latest of Tulips to bloom; the flowers are fiery orange-scarlet shaded externally with yellow and embellished with golden anthers. We owe much to the Russian botanist, Regel, who introduced several Tulips from Central Asia, some fifty years ago, including T. Greigi and T. Kaufmanniana, and to Mr. C. G. Van Tubergen, junr., who organised expeditions and was responsible for such fine gems as T. Fosteriana and T. praestans. The late Mr. H. J. Elwes did much good work in this direction, introducing some superb species and growing in his garden at Colesborne Park a representative collection of these interesting and lovely bulbs. The late Mr. Dykes was also a great authority on Tulips.

I have not referred to the score or more of smaller and very pretty Tulips, but have confined my remarks to those larger-flowered species which should become popular and magnificent garden plants, so soon as they are available in quantity. *Ralph E. Arnold.*

NOTES FROM GLASNEVIN.

Impatiens Jerdoniae.

This remarkable and ornamental Balsam (Fig. 143) is by no means new to cultivation, having been introduced to Kew so long ago as 1852 (*Bot. Mag.*, 4739). Not only are the short, fleshy stems, of a conspicuous, reddish-brown colour, but the flowers are remarkable, consisting almost entirely of a single, inflated, pouch-like petal, salmon-red in colour; contrast is provided by the sepals, which are green and yellow. The ovate, serrated leaves are assembled towards the upper end of the stems where also the flowers appear. The flowering period continues throughout the summer, and even a small group of plants remains attractive for several months. The plants succeed admirably in small pans, in a porous compost. During the summer months they flourish in a bright position, and a dry, airy atmosphere that is suitable for Succulent plants, but in winter they prefer a slightly higher temperature.

Anaphalis nubigena.

This Himalayan Composite is valuable in the rock garden for its late flowering season, and for the silvery-white effect of the whole plant. The slender stems are eight inches to one foot high, furnished with white hairs throughout and bearing scattered, narrow leaves. The stems are terminated by heads of white flowers so that the whole plant is conspicuously silvery in appearance. A fairly elevated and quite unshaded position, and well-drained soil suit it well. According to the *Flora of British India*, this is a variable plant in size of leaves and number of "heads."

Potentilla fruticosa var. Farreri.

The polymorphic Potentilla fruticosa has produced no more delightful form than that bearing the name of the enthusiastic collector. From early summer until frost comes, it bears abundantly its bright yellow flowers, finely set off against the numerous small, much-divided, dark green leaves. Of twiggy growth, it makes a neat but vigorous bush, and is equally valuable as a rock garden shrub or for grouping in the shrubbery. It is at its best when fully exposed to the light and, together with other shrubby Potentilla species, varieties and hybrids, is admirably adapted for beds or for filling a sunny border. It is readily propagated by seeds or cuttings.

Amicia zygomeris.

This distinct and handsome Leguminous plant is a native of Mexico and was discovered by the travellers Humboldt, Bonpland and Kunth, while travelling in South America, and named by them in honour of John Baptiste Amici. De Candolle described it in his *Prodomus*, and it was subsequently described and excellently figured by Sir William Hooker in the *Bot. Mag.*, of 1843, t. 4,008. Although probably a shrub or sub-shrub in its native country, it is here a herbaceous plant producing, annually, stems which attain a height of five feet, bearing leaves composed of two pairs of large leaflets. When young, the leaves are subtended by conspicuous foliaceous stipules which soon fall off. The flowers, produced on short stalks from the leaf axils, are golden-yellow, the standard large and striking. The young leaves and stems are hairy, and in addition the whole plant is glandular. A remarkable feature of the plant is the sleep movement of the leaves. This is, of course, common in Leguminosae, but the fairly large dimensions of the whole plant in Amicia render the day and night positions of the leaflets conspicuous. Normally, spread out horizontally during the day, at night the leaflets hang limply downwards. In cultivation, Amicia zygomeris prefers a sunny position in well-drained soil, preferably at the base of a wall, and in districts subject to severe frosts would probably require root protection in winter. I have not seen seeds produced, but cuttings of the shoots root in sandy soil with slight bottom heat.

Antholyza Caffra.

This handsome species of a genus more commonly represented in gardens by A. aethiopica and A. paniculata seems worthy of more extended cultivation. Seeds were sent to Glasnevin by a Dublin lady resident in South Africa, who has been instrumental in adding many interesting Monocotyledons to our collections, as well as various Proteaceae and Heaths. A. Caffra is figured in Sweet's *Flower Garden*, Series 2, t. 84, under the name of Anisanthus splendens. The bright red flowers are more conspicuous than those of the better-known species. The leaves are broadly linear and strongly ribbed, characteristic of the genus. So far, it has been cultivated in a pot in a cool house from the seedling stage onwards, but next summer we hope to try it out in a sunny border where similar plants are grown. *J. W. Besant.*

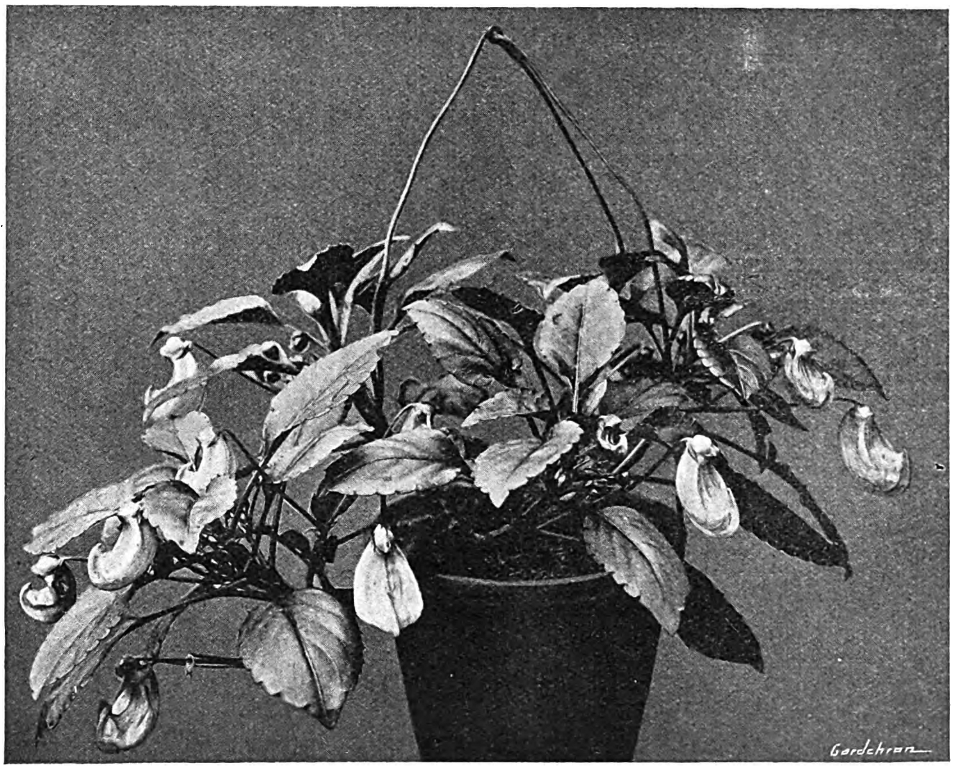


FIG. 143.—IMPATIENS JERDONIAE.

INDOOR PLANTS.

ZAUSCHNERIA CALIFORNICA MEXICANA.

As a pot plant the brilliant Californian Fuchsia makes a most gorgeous display with its dazzling scarlet flowers. Large groups of it, such as have been grown here in pots for the last two years, provide one of the most fascinating effects imaginable, as it flowers profusely for upwards of three months. I recommend it to all who have not grown it in this way, for not only is it valuable for the cold house, but it is a delightful and lasting subject for the decoration of dwelling rooms. Plants grown in six-inch pots with a few small twigs placed near the sides of the receptacles, will easily cover a space well over eighteen inches; forty-eight-sized pots may be used with excellent results.

Soon after the plants have died down they are pulled to pieces, the roots slightly trimmed, and about three small portions are potted directly into the receptacles in which they will flower. Very little water will be needed until a fair amount of growth has been made. The compost we use consists of two parts good fibrous loam, one part each of leaf-mould, and manure from an old Mushroom bed or hot-bed, and plenty of gritty material to keep the whole porous. The pots should be well crocked so as to allow free drainage, and we place lumps of semi-decayed cow manure over the crocks.

From the time the soil is well-filled with roots, plenty of water and occasional supplies of liquid manure are given. The plants delight in full sunlight.

This treatment (with the exception of growing it in sunshine) is very different from that generally provided, as the Zauschneria is usually grown outside on a dry wall or in a dry position in the rockery garden. In the north, however, especially during such a wet season as the present, outdoor cultivation results in disappointment, but when grown as advised, in an airy house, without artificial heat at any time, it is a success.

I may add that all who have seen these pot plants at their best have been agreeably surprised at their beauty and usefulness. *R. H. Crockford, Horsley Hall Gardens, Gresford, North Wales.*

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HYBRID LILIES.

FOR all that Lilies seem to exercise a perennial fascination over hybridisers of plants, it cannot fairly be said that their efforts in the creation of new forms of the genus have met with more than transient success. Brilliant hybrid Lilies have been reproduced in the past but they have had a meteoric career, and considering those at present available, in which human beings are known to have had a share, we are driven to the conclusion that not one is an improvement on its parents in any particular. And it is not for want of endeavour, for while there are published records of scores of hybrid Lilies, there must be unpublished records of many more.

It almost seems as if Nature had decreed that this genus of comparatively modest numbers and of exceptional beauty and elegance should not be modified by human agency, and the brief careers of some famous hybrid Lilies lend point to that view.

An incalculable amount of casual hybridising of Lilies has been done by amateurs and nurserymen in the past, and probably a year seldom passes in which some interested individual does not try his hand at it; but as a rule the work is done in haphazard fashion and not on definite or scientific lines. Lilies which are in bloom simultaneously are mated indiscriminately, as often as not in a perfunctory way, on the principle, apparently, of "chuck and chance it," and without regard to the section to which each belongs. The writer has known by no means extreme instances where L. regale, for example, has been mated with L. Hansoni, and the Formosan form of L. philippinense with L. Henryi! The offspring of a retriever and a bull dog would doubtless be an elegant specimen compared with the result of such unions as these; and yet, the hybridiser will argue that "you can never tell."

If men must hybridise Lilies, they might focus their efforts on some definite purpose, such as the improvement of stamina, a point in which exotic Lilies are all too weak when transplanted to our country. It would be a service rendered to horticulture if, for instance, something of the virile constitution of L. Henryi—a Martagon—could be infused into that frail but lovely species, L. Leichtlinii, also a Martagon, and the despair of the English gardener. Again, what an achievement it would be if the lovely colour of the difficult L. japonicum could somehow be brought into the trumpet of that strong growing plant, L. longiflorum formosanum.

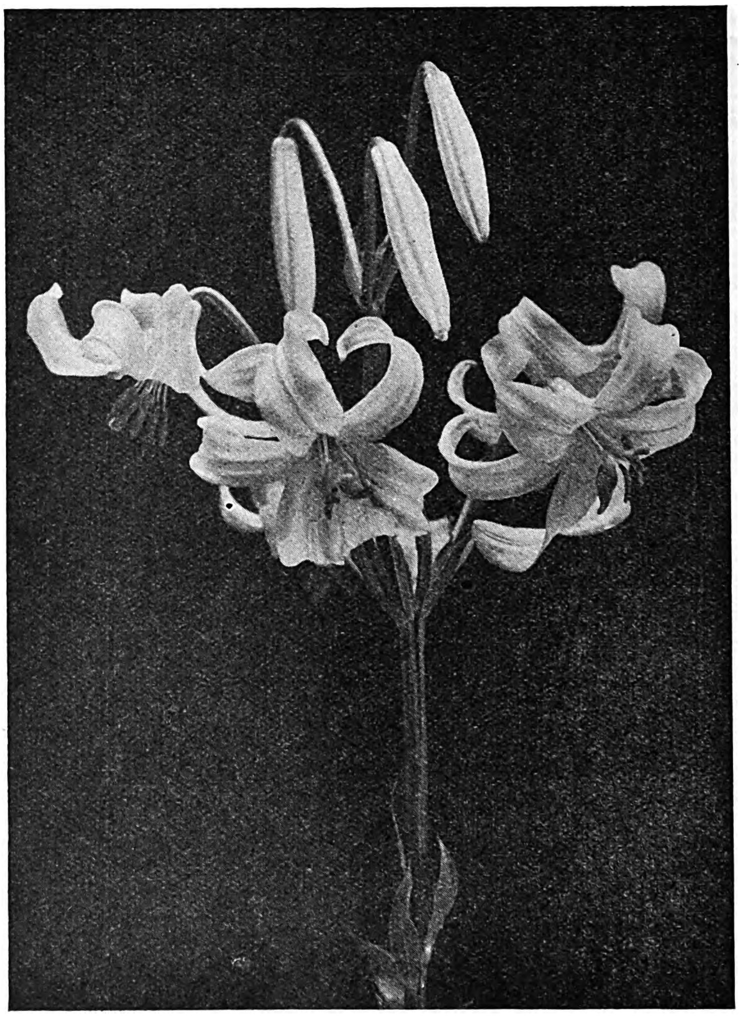

FIG. 144.—LILIUM TESTACEUM.

The evolution of a good yellow-flowered Lily combining the elegant habit and delicious fragrance of L. Parryi with the happy adaptability of L. pardalinum, would be a worthy object to work for, and it should not be unattainable because it happens that each of the species named is readily susceptible to the pollen of the other.

Whatever the future may have in store, it is significant that in this country the famous amateurs of Lilies of the past have been content, in the main, to take this singularly attractive genus as it is, seeking to select especially good forms and to master the elements of the cultivation of exotic species in our changing climate, rather than to raise hybrid forms. It is not to be supposed that all of them have persistently resisted the temptation to hybridise this species and that, for we know that this is not so, but rather that they have realised that the game is not worth the candle.

In the systematic hybridisation of Lilies on a large scale, the work of Luther Burbank stands out above that of all others. About forty years ago, Burbank began by cultivating some fine wild forms of L. pardalinum he had collected in north-western California and transferred to his land at Sebastopol, north of San Francisco. Successive generations of seedlings of these forms were raised and intercrossed, and by 1890 Burbank had fixed five or six especially good strains. Then he began fertilising these pardalinum strains on a great scale with pollen of Lilies from other countries, and according to C. Purdy,* probably the only living being who has first-hand knowledge of Burbank's work on Lilies, a year later had upwards of 400,000 cross-bred seedlings in pans. These were planted out in a field and flowered in 1894. Three-fourths of them were eliminated and the remaining hundred thousand covered three acres, "solid in nursery rows."

"The field of three acres (at Sebastopol) slopes gently to the east; the soil is a light sandy loam; in an air line the distance to the Pacific Ocean is about twelve miles, and the air is tempered by daily ocean breezes. . . . . In the field about one hundred thousand of the hybrids were in bloom . . . . It is needless to say that a richer mass of yellow, scarlet and gold could not well be imagined. Nearly all, unlike L. pardalinum, were fragrant . . . . . . many exquisitely so. With a favourable wind, the odour can be perceived at a distance of five miles. In colour the flowers range from the usual yellow or orange centre and scarlet tip of L. pardalinum to dark red on one hand and rich orange-red, lemon and a few white and pale lemon or straw-coloured flowers on the other. Nearly all are spotted or dotted, many faintly, and some are clear lemon-yellow. . . . . The hybrids have inherited the strong constitution of L. pardalinum and its freedom from disease . . . . I also noted that hybrids of L. Parryi and L. Humboldtii show a vigour neither parent possesses."

"All are extremely floriferous, thirty to forty flowers to a plant being common, and a few having over a hundred. One of the most curious forms was one in which L. pardalinum var. minor had been crossed with an unknown species. This might be called a Tree Lily. The bulb threw up many stalks. One of these branched about a foot from the ground into eight branches. The largest branch had forty-three blooms, while the bulb bore two-hundred-and-seven."

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* *Garden and Forest*, August 14, 1895, p. 328.

When Purdy saw them in bloom he thought he could detect traces of the influence of the Lilies of the old world and eastern America, which had been used by Burbank in his experiments, but eventually Purdy reached the conclusion that all the crosses in which foreign Lilies had been employed were either failures or reversions to the pardalinum type.

On the other hand, the hybrids among the Pacific Coast Lilies were strikingly successful and Burbank achieved remarkable results by crossing L. pardalinum with L. washingtonianum, L. Humboldtii, L. Parryi and L. maritimum. Early in the century selected forms of these were distributed by Purdy, to whose care Burbank had consigned them in 1900, and many reached this country along with fine, cultivated forms of L. pardalinum. Some of the hybrids of L. Humboldtii were particularly lovely, and at one time it almost seemed as if Burbank had succeeded in imbuing the tissues of L. Humboldtii with the robust constitution of L. pardalinum.

But gradually these hybrid Lilies deteriorated in cultivation here, and for any permanent effect it has had on Lilies in general in this country, Burbank's work might never have been done. Few, if any, of the hybrids remain in cultivation in Britain now, though it is understood that Mr. van Tubergen, of Haarlem, still cultivates L. Burbanki, which was the name applied by a firm of nurserymen in New York State, without Burbank's sanction, to some of his hybrids between L. pardalinum and L. washingtonianum,[*] which they had acquired.

It was, perhaps, inevitable, that when Japanese Lilies first became available in Britain and America they should have been pressed into service by hybridisers, and if only indifferent success attended their efforts here, it was otherwise in the United States, where a brilliant series of hybrids was raised between L. auratum, L. speciosum and L. tigrinum.

The most remarkable of these was L. Parkmannii, which, with the exception of L. testaceum, (Fig. 144) was the only hybrid Lily thought worthy of inclusion in the *Monograph* of Elwes. It was the offspring of a union between a deep-coloured form of L. speciosum, as the mother, and L. auratum, and out of about fifty seedlings which Francis Parkman, the historian, planted out in his garden at Boston, Massachusetts, in 1869, only one had any hybrid character in it; that was the plant to which Parkman's name was ultimately attached. Virtually, it was a deep, red-flowered L. auratum, with flowers of a maximum span of all but one foot. Parkman sent some bulbs to Anthony Waterer, in whose nursery, at Knap Hill, the Lily flowered in 1875,[†] before going the way of so many hybrid Lilies.

Using the same Lilies as parents, C. M. Hovey, of Boston, also raised some remarkable hybrids, one of them having blooms fourteen inches across—larger even than L. Parkmannii. In 1864, he succeeded, too, in effecting what was described as an attractive cross between L. speciosum album and L. tigrinum.[‡] In 1914, P. S. Hayward, of Clacton-on-Sea, raised a hybrid of much the same general character as L. Parkmannii, between L. speciosum magnificum and L. auratum var. platyphyllum, the latter being the mother (Fig. 145). This magnificent hybrid, whereof the stock came into the hands of the late Col. Hugh Warrender and the writer, has as poor a constitution as the rest, and is not easily kept going.

Innumerable hybrids have been raised between L. Martagon and others, and these seem to have a more tenacious hold on life than most. L. Dalhansonii, for instance, which was raised in 1893, is still in cultivation, as is L. Marhan, raised seven years previously. The Lily called Golden Gleam, which was raised in Huftelen's nursery at Le Roy, New York, in 1893, still pursues a more or less fortuitous existence in Britain. It was the result of crossing L. Martagon album with L. tenuifolium, and is a typical hybrid.

Before her death, six years ago, Mrs. Backhouse raised a number of interesting Lilies of a certain type by crossing L. Martagon album and dalmaticum with L. Hansonii (Fig. 146), and recrossing selected seedlings. In 1900, a Lily with flowers like those of L. auratum, but buff-colour, was raised at Kew between L. Henryi and the so-called L. Brownii var. chloraster. This Lily was named L. kewense, and though the writer managed to keep it alive for about twenty years; it always had a precarious hold on life and finally the last of the race disappeared two years ago.

L. regale had not been long in cultivation before it was laid under tribute by hybridisers, but so far it does not seem to have fathered any remarkable Lilies. The Lily known as L. sulphurgale has L. regale for one parent and L. sulphureum for the other, and is valued by some growers for its late-flowering habit. L. princeps[*] is a natural hybrid between L. regale and L. Sargentiae, and the same parents, as well as those of L. sulphurgale, have been mated time and again by amateurs, without, however, evolving a Lily superior in any way to the parents.

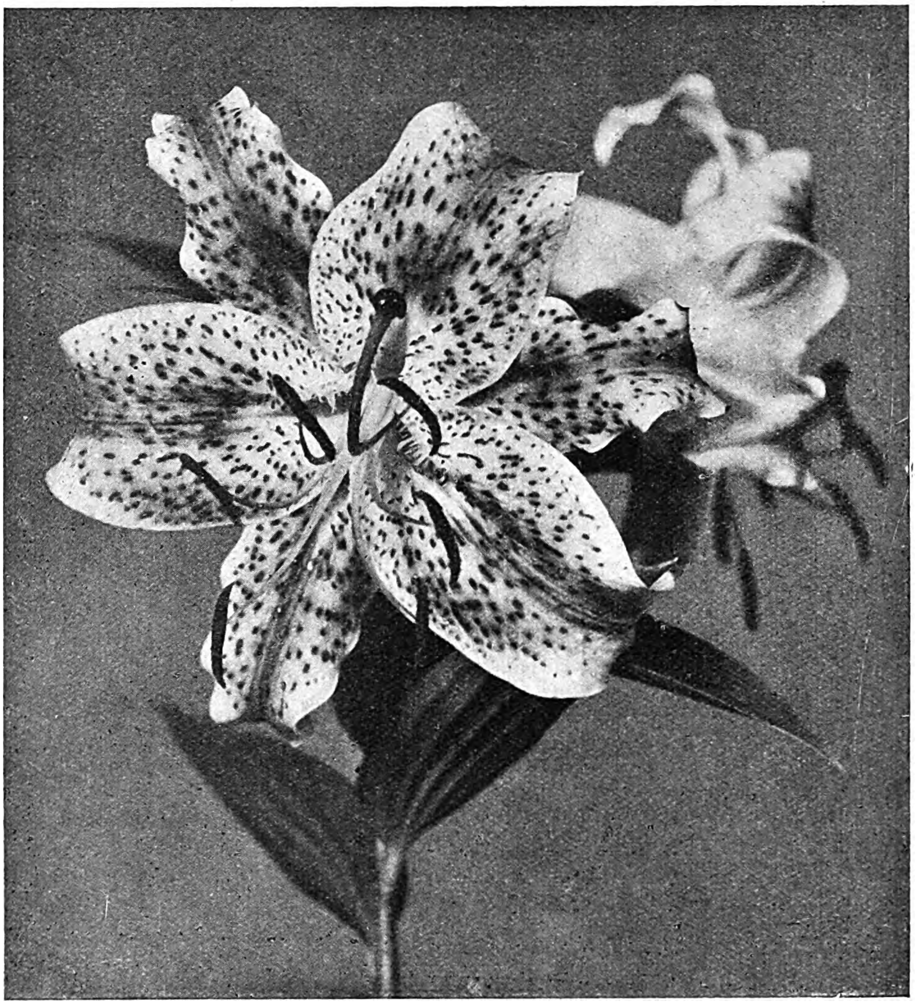

FIG. 145.—LILIUM PARKMANNII, HAYWARD'S VARIETY.

Dutch nurserymen have long had a *flair* for raising hybrids of the upright-flowered Lilies loosely classed in catalogues as davuricum, elegans, Thunbergianum and umbellatum. The type of the latter is probably a hybrid between L. davuricum and L. croceum, and it has undoubtedly been used by the Dutch as one parent of some of the hybrids referred to; but the parentage of most of them is so involved as to defy investigation. We may be confident, however, that the group of Lilies classed by Japanese bulb merchants as L. elegans has played a prominent part in the evolution of the Dutch hybrids. The Japanese forms of L. elegans, or L. davuricum, as it would be more correct to call them, are not hybrids but natural forms. The Japanese do not hybridise Lilies, and the many Japanese varieties of L. auratum and L. speciosum have had a natural origin.

Mr. E. A. Bowles, in whose garden Farrer's Lily No. 316 (now called centifolium) flowered for the first time, has successfully crossed it with L. sulphureum, and the three-year-old seedlings promise well.

L. candidum has long been the sport of Lily hybridisers, but nothing very remarkable ever seems to come of their efforts. There is often a trace of hybrid character in the progeny, usually in some trifling alteration of leaf, petal or port, but the variations from type rarely amount to much; and though it can hardly fail to be born anew some day, L. testaceum *redivivus* has still to appear.[*] It should be easy of reproduction because though the garden form of L. candidum rarely sets fertile seeds, the wild form from Salonika, now in the hands of many growers, is lavish of it.

Though no one can have any serious doubts as to the parentage of so obvious a hybrid Lily as L. testaceum, the facts of its birth are unknown. Shortly, the plant was first noticed in Haage's nursery at Erfurt, in Saxony, in 1836, among a bed of Martagon Lilies Haage had received from Holland. Simultaneously, three amateur gardeners of Lille had the plant, also from Holland, and soon afterwards Van Houtte, of Ghent, bought a number of bulbs in Holland. Bulbs soon reached England and Dr. Lindley, who saw the Lily in bloom at Rollisson's nursery at Tooting, in 1842, was the first to give it a formal name—L. testaceum.[†] Lindley thought it was a Japanese plant and his view was shared by Wallace of Colchester and others at the time, and for years afterwards. It is perhaps needless to add that no Lily even remotely approaching L. testaceum is known in Japan.

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[*] *Garden*, September 28, 1901, p. 220.

[†] *Gard. Chron.*, October 16, 1875, p. 494, fig. 106.

[‡] *Garden*, May 22, 1875, p. 420.

[*] *Gard. Chron.*, May 22, 1920, p. 255, fig. 118.

[*] In *The Garden*, January 28, 1889, p. 56, F. W. Burbidge reported that Col. Trevor Clarke had successfully reproduced L. testaceum.

[†] *Bot. Reg.*, 1842, *Misc.* 51, 1843, t. 11.

When L. testaceum is fertilised with the pollen of L. chalcedonicum—one of its reputed parents—the result is the Lily known as L. Beerensi,[*] a hybrid which had a precarious existence and has been reproduced since it was first published. Mr. L. Johnston, of Hidcote Manor, flowered the same hybrid in the course of last summer. When mated, Parry's Lily and L. pardalinum are profuse in the production of true hybrids, and some of these are very fine. Among the seedlings it is nothing exceptional to find a yellow-flowered pardalinum, which can hardly be far removed from the long lost L. Wareii. Unfortunately, however, no one seems to have discovered the secret of ensuring to these hybrids the priceless virtue of longevity, and so the stock gradually thins out.

It is not, perhaps, so generally known as it might be that no hybrid Lily seems definitely fixed, not even L. testaceum—by far the oldest hybrid known. None of those which have come into the writer's hands can be trusted to breed true from seed, and all must be raised by offsets, scale bulbs or stem cuttings.

Spontaneous hybrids among Lilies are rare, at any rate, in Britain, and in twenty-seven years' experience, the writer has only known of one, though he has had hundreds of many kinds flowering together in a small area, and has often watched bees flying from this species to that. *A. Grove.*

HOW A PATENT IS OBTAINED.

EVERY week applications are made to the Patent Office for the protection of various devices and gadgets which will be used by gardeners all over the country, and which in many cases have been invented by practical gardeners. These inventions include (I am quoting from the *Official Journal of Patents*) such articles as: A Potato dressing apparatus; packing cases for Potatos; machines for removing stones, cores and stalks from fruit; machines for planting vegetables; collapsible barrels, and a hundred and one other similar devices. Yet for every application for patent rights there must be many gadgets or devices which have been invented by practical gardeners and used successfully by them and their friends, for which no patent has been obtained, and this in spite of the fact that the obtaining of this would have greatly benefited the owner. Why is it that so many people never trouble to protect their inventions, for inventions they are, by securing a patent?

There seems to be a general idea that the obtaining of a patent is an expensive and extremely complicated business; it certainly does cost a few pounds, and I would never advise anyone to obtain a patent for an invention which is merely weird and wonderful, but if a useful device is conceived, and it is such that it can be reproduced on a commercial basis, there is no reason why the inventor should not find it a source of additional income.

In the first place the object for which it is desired to obtain protection must be eligible. To be eligible it must be (1) an invention which is *new within the realm*; (2) the invention must be a *manner of manufacture*; thus where no material produce of a substantial character is realised or affected by the invention, no patent rights may be obtained; for instance, the rights of an author in the production of a book may be protected by copyright, but not by a patent, as this is not a manner of manufacture, and (3) the invention must not be contrary to law or morality, so that no patent may be granted for a lottery.

As regards the actual obtaining of the patent rights, this is governed by the provisions of the Patent and Designs Acts of 1907 and 1919, and the Patent Rules of 1920, which may be referred to for further details, and which may be obtained from H.M. Stationery Office, Kingsway, London, W.C.2.

Anyone may apply for a patent, provided he is the true and first inventor, or provided he applies jointly with the true and first inventor. How should this application be made? The first thing to do is to obtain from the Controller of the Patent Office, 25, Southampton Buildings, London, W.C.2, a form of application. In this application the inventor will have to make a declaration that he is in possession of an invention, and that he claims to be the true and first inventor, and that he wishes to obtain a patent for his invention.

When this application is sent in it must be accompanied either by a complete or a provisional specification. If it is decided to have a complete specification, this will have to describe the invention in detail, explaining how it is constructed and how it is worked, whereas if a provisional specification is used, all that is necessary is a clear description of the device, without going into any details. In the majority of cases, it may be mentioned, the provisional specification is the most useful.

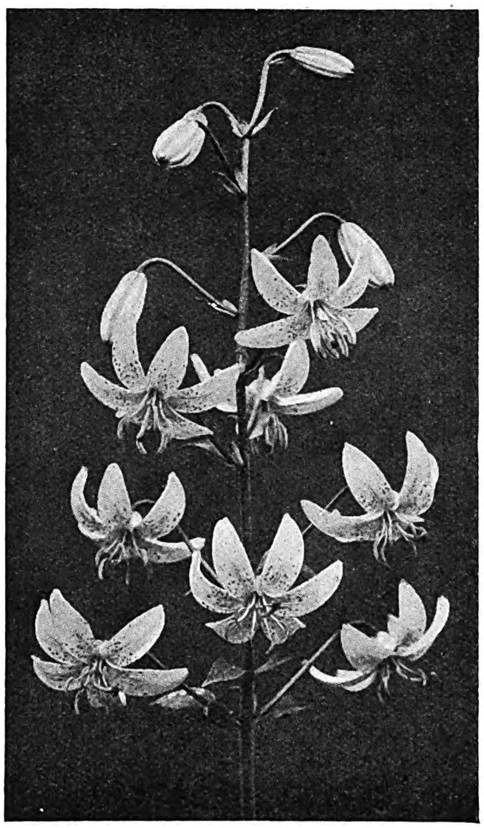

FIG. 146.—LILIUM MRS. R. O. BACKHOUSE.
(L. Hansoni × L. Martagon).

On the application itself a fee of £1 is payable, and if it is accompanied by a complete specification a fee of £3 will have to be paid on that in addition. For a provisional specification no fee is payable, but it is understood that unless a complete specification, together with a fee of £3, is sent within nine months from the date of an application accompanied by a provisional specification only, the application for the patent has been abandoned.

After the application and the specification have been examined and accepted, and on the acceptance of the complete specification, the Controller advertises the acceptance and the specification is open for public inspection.

During a period of two months from the date of this advertisement, anyone who considers that a patent ought not to be granted in respect of the invention in question must give notice of his opposition to the grant; assuming, however, that there is no opposition or that if there has been one it has been successfully disposed of, a patent will be granted to the inventor. Except in cases where there has been an opposition and an extension allowed, the patent must be sealed within eighteen months of the date of the application. For the sealing of the patent a form must be obtained from the Patent Office and stamped with £1 fee stamp; this should be filled up and left at the Patent Office so that it may be sealed.

Once a patent has been obtained the owner is given the exclusive right of reproducing the invention in question for a period of sixteen years. During this period, however, he must still continue to pay fees for his right to the monopoly. From the fourth year of his patent he will have to pay annual fees rising from £5 to £15, the fee being increased each year by £1.

If during this period of sixteen years anyone infringes the exclusive right of the patentee without his consent, he can bring an action for an injunction, which is an order preventing the wrong doer committing any further infringement, and in addition he can, in certain cases, obtain damages from the infringer for the loss that has been sustained.

An injunction will be granted in every case in which it can be shown that an infringement has taken place; damages, on the other hand, can only be obtained where it can be shown that the wrong doer knew that he was infringing someone's rights, so that if the infringement was innocent no damages will be awarded.

Even though the creator of a useful device thinks that he cannot obtain a patent without outside help, there is no reason why he should not employ someone else to secure the necessary protection for him; a reliable patent agent will carry through the whole business. I have written "reliable," for in most businesses and professions there are "sharks" and the patent agency business is not immune. *H. A. S.*

UNEMPLOYMENT INSURANCE AND THE HORTICULTURAL WORKER.

A QUESTION of no little interest to all horticulturists and workers was raised recently in the law courts; the question of whether or no people employed by horticulturists and nurserymen in preparing their products for sale, and in work in connection with the marketing of these products, were excepted from the provisions of the Unemployment Insurance Act of 1920—as being employed in agriculture—which term in this Act includes horticulture.

In the case in question a man and five women were employed by the nurserymen to select and bunch flowers and grade fruit and Tomatos and similar work, the business of the man being to superintend the work of the five women.

From previous cases and from the decision in the present case on this subject, it appears that the fact that a man is employed in getting the goods ready for the buyer does not prevent him from being employed in horticulture; and if this is so, in order to determine, in such cases, whether unemployment insurance will have to be paid or not, seems to depend on whether the worker has to possess any particular knowledge of the products he is dealing with to carry out his work properly. Thus in a previous case it was decided that men employed in separating and purifying seeds were considered as being employed in horticulture, but a milk roundsman who merely sells the milk and neither knows nor has any need to know anything about its production, could not be considered as being employed in agriculture.

A general rule for determining whether such persons could be said to be employed in horticulture or not was laid down thus: Persons are employed in agriculture and horticulture when employed upon any operation done about the production, preparation, or transfer of the products of the farm or garden or orchard in the best saleable condition to a first buyer or salesman, or agent for sale, if one be employed, or to a distinct business under one proprietorship. But if the industrial status and occupations of the employed persons are such that, though they are working about or in connection with a farm or garden or orchard, they may properly be said to be essentially pursuing their own special occupations, they are not employed in agriculture or horticulture within the meaning of this rule. *H. S.*

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[*] *Garden*, July 6, 1895, p. 11.

NOTICE OF BOOK.

Common Wild Flowers.

Those who are commencing the study of botany by collecting specimens of wild British plants will find Mr. T. Ernest Waltham's new book* particularly helpful because the line drawings and descriptions of the common wild plants of field and forest, bog and hedgerow render identification a very easy matter. One-hundred-and-eighty species are described and illustrated, and as description and illustration together occupy one page only in each case, the arrangement is a very convenient one, especially for children who are learning to take an interest in our native flora. Thirty-nine genera are represented, and as a frontispiece there is a colour chart showing six colours. The colour names may be all right from the point of view of an artist like Mr. Waltham, but we believe few people would regard his purple, violet and mauve as correctly representing the hues generally recognised under these names.

The author, who is well-known to our readers in connection with the coloured plates that have appeared in *The Gardeners' Chronicle*, has contributed the text as well as the illustrations, and in the former he gives the Natural Order, botanical name, and the British, French and German common names of the plants he illustrates. Interesting information is also given in regard to the pressing and preservation of herbarium specimens, and Mr. Waltham discusses at some length the use of Fuller's earth as a drying medium. Additional notes on poisonous and edible plants appear at the end of the book, and there is a very useful index.

THE PUBLIC PARKS OF SWANSEA.

Some twenty years or so ago, I had an opportunity of inspecting the public parks of Swansea. It was soon after the appointment of the present General Superintendent, Mr. D. Bliss, and I came away with a feeling of disappointment that the townsmen of such an important town as Swansea should take so little heed of their opportunities for developing their parks and open spaces. There were several parks, but in no single instance had any attempt been made to make them attractive or interesting, neither did anything appear to have been done towards providing facilities for games in the public enclosures.

Quite recently I visited Swansea again and found a very great change. Not only are there more parks and open spaces, but there was displayed on every hand instances of very considerable progress and gardening ability. Distinct horticultural features have been introduced into a number of the parks, such as Rose gardens, herbaceous collections, rock gardens and what not, while there were extensive displays of popular flowers such as Sweet Peas, Delphiniums, Violas and Dahlias. Further, areas had been set apart for games and there were excellent bowling greens, hard and grass tennis courts, cricket and football grounds, miniature golf courses and children's playgrounds.

What, however, impressed me most of all was the innovation made in Singleton Park, where a walled garden had been devoted to a collection of economic plants, hardy and tender and to a collection of British plants.

Singleton Park, formerly the property of Lord Swansea, was acquired by the Corporation a few years ago. The mansion, with an area of garden ground in the immediate vicinity, was made over for the home of the Swansea University, the remainder of the extensive grounds being retained for a public park. A considerable portion of the park is maintained in a natural state. The ornamental garden near the house, which originally contained amongst other interesting trees and shrubs, a good collection of Himalayan Rhododendrons, is being remodelled; common shrubs are being cut away to give space to the more valuable plants, and new and interesting trees and shrubs are being planted. Peat-loving shrubs are prominent, and there is talk of a collection of Lilies. A Bamboo collection is another feature.

A quarter-of-a-mile or so away from this part of the park is the old-walled kitchen garden, within which stands a second enclosure with plant houses and about an acre of garden ground. The larger garden has been turned into a nursery for trees, shrubs and herbaceous plants for furnishing the other parks, whereas the smaller enclosure has been utilised for a scientific collection of plants. One of the plant houses is used as a conservatory, the others are devoted to tender plants of economic value. Nearly two hundred kinds of plants are to be seen in these houses, embracing all the better-known useful tender plants, of which, Sugar, Tea, Coffee, Cocoa, Para Rubber, Pepper and Ground Nut are examples, with many lesser known subjects. I was informed that there is an intention to go a step further by repairing a large greenhouse at present not in use, and planting out as many as possible of the more important plants. Out-of-doors there are between 300 and 400 species of trees, shrubs and herbaceous plants; that are of economic value. In order that the collection may be used by the general public, a catalogue has been prepared giving scientific and common names, the part of the plant used and the uses, and this is sold for the modest sum of twopence. At the end are lists of British plants that are, or have been, used for food, textiles, medicine or other purposes.

In the same garden a collection of British plants has been arranged in a series of beds, rockeries, swamps and pools. A very considerable number of the plants found wild in the British Isles has been got together and is constantly receiving additions. The Corporation, in looking after their own collections, are not unmindful of the wants of other institutions, for a large number of seeds are collected each year, a seed list printed and distributed to home, continental and other establishments. By this means a large number of packets of seeds are distributed.

A beginning has been made in the establishment of an economic museum, wherein it is intended to display the products of the kinds of plants grown in the garden.

Although the garden has only been established some three or four years, it has already out-grown its quarters, and more space is required. One unfortunate fact is connected with this special garden; it is rather difficult to find and it would be a great advantage to casual visitors if a more prominent entrance could be arranged.

The Corporation of Swansea is to be congratulated upon the progress made in their parks during the last twenty years, and particularly in the development of the scientific garden in Singleton Park, which is probably unique in municipal parks in this country. It is further to be congratulated on having a Superintendent such as Mr. Bliss, who so worthily carries out their wishes. That other Corporations are alive to the value of the training received in the Swansea Parks is evidenced from the fact that the Superintendents of Parks of such important towns as Blackpool and Salford were a few years ago Assistants in the Swansea Parks, whilst within the last few weeks a Swansea Parks Assistant has been appointed Superintendent of Parks at Bath.

In addition to looking after the Corporation's interest in their parks, Mr. Bliss has charge of the cemeteries, foreshore and publicity work connected with the town, therefore his assistants have the opportunity for becoming many-sided men. *W. Dallimore.*

A NEW RASPBERRY PEST.

During the past summer my attention has been directed to the life-history of a fly which is doing much harm to the fruit of the Raspberry. The insect itself is not new, but hitherto I have failed to find any evidence of its having been regarded as injurious. A few details of my personal observations may first be given. In July, when the fruits began to ripen, it was found that those at the base frequently failed to develop. They became dry, shrivelled and black, making the fruit unsightly. As larvae of the beetle which is known to infest cane fruit were seen, it was at first thought that they were the cause.

On August 1, however, about a dozen affected Raspberries were placed in a breeding chamber and watched. The large (beetle) larvae died, and for a time nothing was seen. After three weeks it was found that a great number of flies had emerged, and when the material was examined with a lens, larvae in all stages of development, together with pupae and the empty cases from which the flies had escaped, were found in large numbers. Here was material for the study of the entire life-history. Having thus succeeded in breeding out a score of flies, I determined to test my observations by collecting another series.

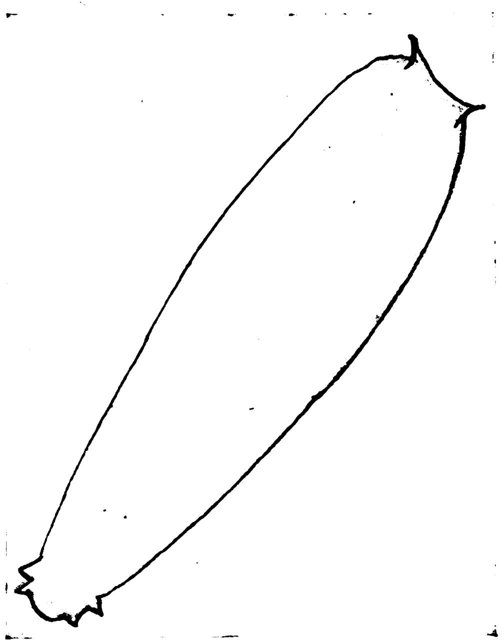

FIG. 147.—PUPARIUM OF SCAPTOMYZA, GRAMINIS, FLN.

On August 19, diseased berries were again placed in a fresh, clean, breeding glass. With them were three large larvae, which soon died. The only other signs of life were two almost invisible eggs, evidently those of a small fly. On August 26 two fly larvae were seen, and the following days others came to view. On August 30, the material had to be left for ten days unobserved, owing to my absence from home, but when on my return I examined the tube there were (September 9) a dozen or more perfect flies, while other larvae were still to be seen. The puparia are about three millimetres in length, the body of the fly being also of the same dimensions. The wings, however, extend two millimetres beyond the posterior end of the body, so that the entire insect is five millimetres in length. One of the insects was allowed to escape on September 12, when it flew straight to the window with great vigour. Several others followed the moment an opportunity occurred. These were all of one species and could readily be distinguished from all the other kinds usually found in the house at this season by their small size and the length of wing. The insects fed freely on the Raspberry pulp in which they had been bred, so that we have here a confirmation of Sturtevant's remark that he has reared the fly from Tomatos and Potatos (presumably diseased). It would appear that in this country the fly is chiefly in evidence in the months of August and September. It was found in Sherwood Forest on August 30, 1912; in Bulwell Forest, Notts., on the 8th of the same month, and at Mapperley on September 17. In 1914, however, it occurred as early as June, near Ollerton.* Mr. F. W. Edwards, of the British Museum, has been good enough to confirm the identification of my specimens, which are referred to Scaptomyza graminis, Fln. The fly belongs to the Drosophilidae, and is said normally to be a leaf-miner. In the South Kensington Collection are specimens "of this or a closely allied species labelled as bred from Watercress."

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* *Common British Wild Flowers Easily Named*, by T. Ernest Waltham. Oxford University Press, Falcon Square, E.C. Price 3s. 6d. net.

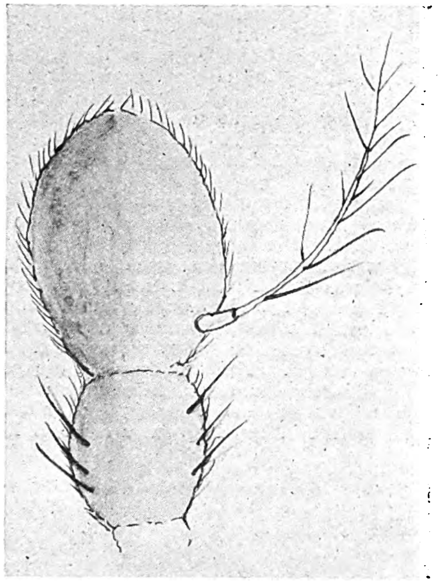

FIG. 148.—ANTENNA OF SCAPTOMYZA GRAMINIS, FLN.

It would seem that the reason for our not discovering the fly before is to be found in the assumption that the Raspberry beetle was the sole cause of the mischief. Thus on August 24, I published in the *Birmingham Daily Post* some account of my observations, which brought a letter from Mr. Ralph Dixon of Bromsgrove, a large Raspberry grower.

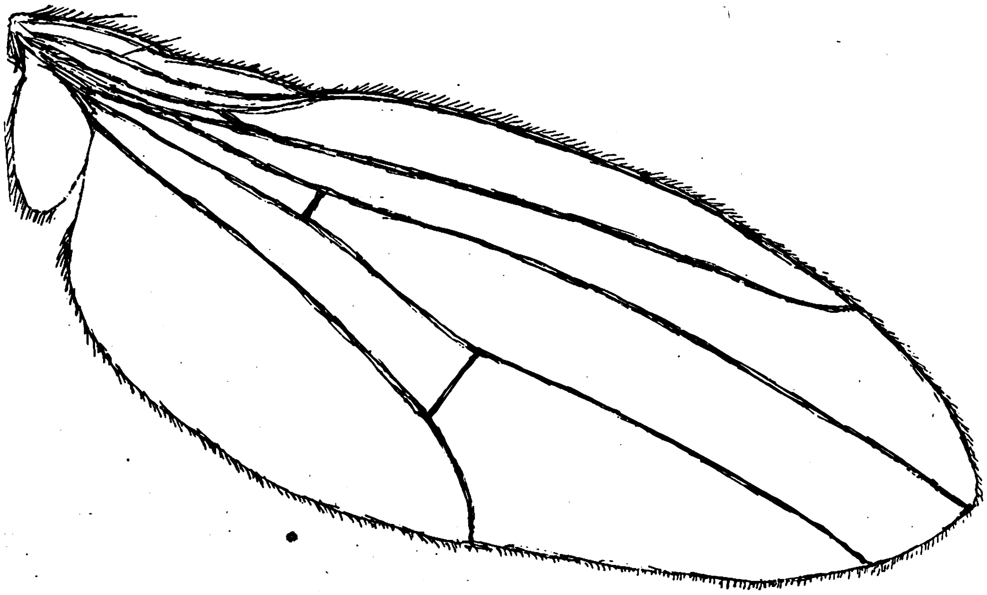

FIG. 149.—WING OF SCAPTOMYZA GRAMINIS, FLN.

"I was always under the impression (he wrote), "having been so informed by experts, that the seediness at the base of Raspberries was caused by the larvae of the Raspberry beetle, but I gather from your article that it is caused by a different larva. I have, however, noticed for some years a little black fly on the Raspberry in May, and often wondered what it was."

Whether or not this fly, and that which attacks the fruits later, is one and the same, remains to be seen, but I have been carefully observing the "seedy Raspberries" submitted by Mr. Dixon, and have bred out a number of flies therefrom identical with those (S. graminis) which have done so much damage to my own fruit. Yet the material from Bromsgrove was, to all appearance, affected by the Raspberry beetle only. Of these larvae nearly all died, but at least one has pupated, and the puparium is not only absolutely different in size, colour and general appearance from that of the fly, but is still dormant, while those of the fly have been burst by the perfect imago.

It seems pretty clear that more than one brood can be brought off during the fruiting period. I am unable to state the exact number of days required for perfecting the life-cycle, but as diseased Raspberries placed in the breeding chamber on August 19 had yielded a large number of perfect flies before September 9, three weeks seems to be sufficient for the entire process.

The accompanying illustrations (Figs. 147, 148, 149, and 150) showing a puparium, antenna, wing, and frontal aspect of the head will, it is hoped, although greatly magnified, serve as aids to identification. They are all drawn from recently collected material, but have not been compared with the originals, if any have been published in earlier periodicals. *Hilderic Friend.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 313).

ENGLAND, S.

Kent.—The fruit crops generally are not very good. Apples, in some places, are yielding well. Plums were very poor; Sweet Cherries in some places were good, and Morello Cherries also were plentiful. Peaches were half-a-crop. Strawberries were a poor crop; the frosts destroyed most of the blossoms. Gooseberries yielded heavily, and Raspberries were a bumper crop, the varieties Lloyd George and Pine's Royal being very good, but the latter does not fruit for two feet from the bottom of the canes. The question of the Strawberry is very difficult; we cannot get anything like the results we used to have; there does not seem to be any vigour in the plants. Our sub-soil is chalk. *J. T. Shann, Betteshanger Park Gardens, Eastry.*

——One cannot write in high enthusiasm of a season so precarious as the present; late frosts, keen winds of a cutting nature during the flowering period of most fruits, and, to crown it all, a month or more of severe drought so soon as the flowers had set, could but result in a disastrous effect on the hardy fruits, and this is the more regrettable, as blossom was abundant in every case. Probably the Strawberry suffered most from frost and drought, and this crop was almost a failure in many gardens. Plums likewise could not endure such climatic conditions, while Pears suffered badly also. The Apple crop appears to have escaped fairly well, for the majority of the trees that have come under my observation are carrying good crops, though many fruits fell owing to drought. Currants, Gooseberries and Raspberries benefited by the bountiful rains. Our soil is variable, with a clay and stony loam subsoil respectively. *James Mayne, 32, Wigtown Road, Eltham.*

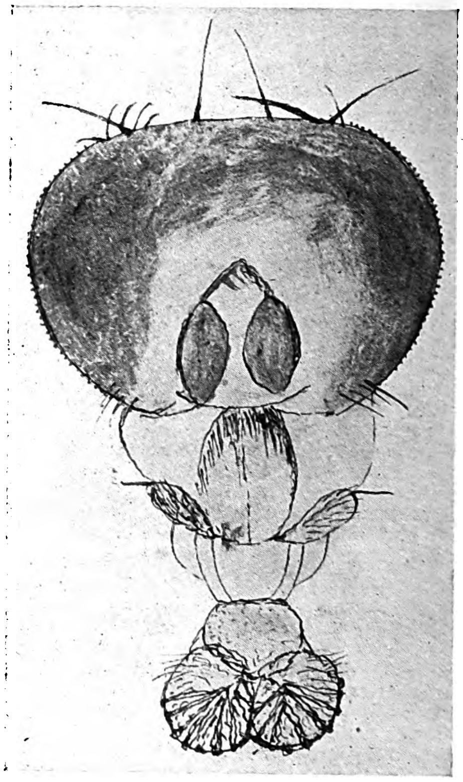

FIG. 150.—HEAD OF SCAPTOMYZA GRAMINIS, FLN.

Middlesex.—Apples generally are plentiful; the flowers were strong and bright sunny weather prevailed when the trees were in bloom so that the fruits set well. Pears are a good average crop. Soft fruits were plentiful, especially Raspberries, Gooseberries and Strawberries, while Black Currants were better this year than last. Peaches and Cherries were satisfactory, but Plums gave a light yield. The growth of most fruit trees is very satisfactory. The soil is light and gravelly. *H. Markham, Wrotham Park Gardens, Barnet.*

——We have an excellent crop of Apples, and the quality of the fruit is very good. Pears, on the whole, are very good. Plums were below the average quantity. The crop of Cherries was equal to the average. Of small fruits, Gooseberries, Red and Black Currants were all satisfactory. Raspberries have been extremely plentiful and of splendid quality. Strawberries, which ordinarily succeed well in this locality, were the worst crop I have ever known, due, I believe, to the late frosts and the excessively dry spring. Our fruit trees are growing in heavy soil on a substratum of clay. *James A. Paice, Sunnyfields Gardens, Mill Hill.*

——On the whole, the fruit crops are not quite so discouraging as in the past few years. The trees flowered most profusely, but the blossoms were rather later in opening, and the severe frosts experienced in the spring destroyed many of the flowers. Apples are better than for several years, but certain varieties which are fairly consistent croppers here have failed, notably Lord Grosvenor and Rev. W. Wilks. Cox's Orange Pippin is a very thin crop. Pears are very scarce generally but Doyenné d'Ete bore the heaviest crop for years. We had but few Gooseberries and Currants, although in some gardens these fruits were plentiful. Raspberries were a wonderful crop, especially the variety Lloyd George. Strawberries were largely spoiled by the wet weather at the time the berries were ripening. Plums were very thin; we had just a sprinkling on wall trees. *Geo. H. Head, Fulwell Park Gardens, Twickenham.*

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* *The Invertebrate Fauna of Nottinghamshire*, J. W. Carr, 1916, p. 474.

Surrey.—The weather being very dry in April and May, Plums, Pears and some Cherries that set well dropped, but those Plums and Cherries that remained were good. Apples in a grass plantation are doing rather better than those in the cultivated garden. Raspberries yielded heavily and Black and Red Currants also were very fine crops. We pinched out the tips of the current-year's shoots in May as there were a few aphides on them, and ever since these bushes have been clean and healthy. Gooseberries were not plentiful, but we have had some choice fruits. Peach and Nectarine trees cropped better and they were cleaner than they have been for several years. The soil is light and sandy; in some parts the subsoil is iron ore, in other parts gravel. *J. T. Weston, Hatchford End Gardens, Cobham.*

——There was a wealth of blossom on fruit trees, but 15° and 16° of frost were registered on successive nights when the trees were in flower and spoiled all prospects of a good set. Amongst Apples, Keswick Codlin, Mank's Codlin, Lord Derby, Warner's King and Norfolk Beefing set what appeared to be good crops, but many fruits fell when about the size of an egg. Dessert Apples are scarce. Pears are a total failure; a few varieties of Plums gave about half-a-crop; Apricots set a good crop but most of the fruits turned black after the frost. Raspberries, Black and Red Currants, were fairly plentiful, but Gooseberries were a very thin crop. Strawberries were better than last year, but do not do well in these gardens. Our soil is a deep alluvial loam by the side of the river Mole, and only about forty feet above sea-level. *Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham.*

——Apples, Pears and Plums flowered well and set quite freely, Plums being exceptionally good. Strawberries were retarded in growth and the first fruits affected by dry weather; the second fruits were small and of poor quality. Black Currants and Raspberries bore heavy crops, and Raspberries were free from maggot. The gardens are over six hundred feet above sea-level and escaped the severe spring frosts. The soil is loamy sand. *James M. Grant, Grayswood Hill Gardens, Haslemere.*

——We have a good average crop of Apples; the varieties Warner's King, the Codlins, Newton Wonder, and a few other culinary varieties, are carrying heavy crops, and such dessert varieties as Worcester Pearmain, Cox's Orange Pippin, and King of the Pippins are well-cropped. Pears blossomed very freely, but many of the blooms were cut off during heavy hailstorms; trees on walls have an average crop, but fruits are scarce on the standard trees. Plums were very scarce on the standards, for although they blossomed freely they failed to set well; trees on walls carried fair crops. All small fruits have very heavy crops, with the exception of Strawberries, which were much below the average. *J. Collier, Gatton Park Gardens, Reigate.*

——The fruit crops in this locality are very uneven. Apples have about an average crop; Blenheim Pippin, Bramley's Seedling and other culinary varieties have cropped heavily. Plum trees bore a heavy crop of clean fruits. Gooseberries and Currants suffered severely where frost caught the tops of the bushes, otherwise they were very good. Raspberries were our best crops and Strawberries our worst. Our soil is heavy clay, the district late and cold, so that few dessert Apples finish well here. *F. Jordan, Ford Manor Gardens, Lingfield.*

(*To be continued*).

HOME CORRESPONDENCE.

A Method of Staking Freesias and Other Plants.—I wish to call the attention of fellow gardeners to a method of staking Freesias which I have practised for nearly twenty years. I cannot now recall where I got the idea from, but I have found it very effective, and others whom I have induced to adopt it have also agreed as to its efficiency. As it is rather difficult to describe, I have given a simple diagram (Fig. 151), which, with the help of the letterpress, will enable readers to follow the instructions. The double circle shows the flower pot, and the five small circles the stakes, while the straight lines illustrate the raffia. Five stakes are used at equal distances apart. A long piece of raffia or other tying material is then taken, and a start is made at stake No. 1. One end of the raffia is held at this point in the thumb and finger of one hand, while with the other hand the raffia is passed along the outside of stakes No. 1 and No. 2. It is then continued to No. 4, passed on the outside of this and No. 5, then on to No. 2, and the outside of No. 3, then on to No. 5 and No. 1, then to No. 3 and No. 4, and on to No. 1, where the knot is tied. In this way all the stakes are enclosed, and a five-pointed star is formed, so that there are eleven enclosures into which the blades of the Freesias may be drawn and kept upright. It may at first seem intricate, but all one has to remember is to pass the raffia on the outside of two stakes, then miss one, over two more, miss one, and so on till the raffia is brought for the second time to 1, where a start was made. The raffia is not tied to the stakes, therefore, as growth lengthens, the whole of the arrangement may be raised to hold the foliage in place. This plan keeps the foliage and flowers of Freesias and various bulbs spaced out better than merely putting in four stakes and encircling them with raffia. The stakes over the outside of which the raffia should be passed are in the following order:—1, 2, 4, 5, 2, 3, 5, 1, 3, 4, 1. *William F. Rowles.*

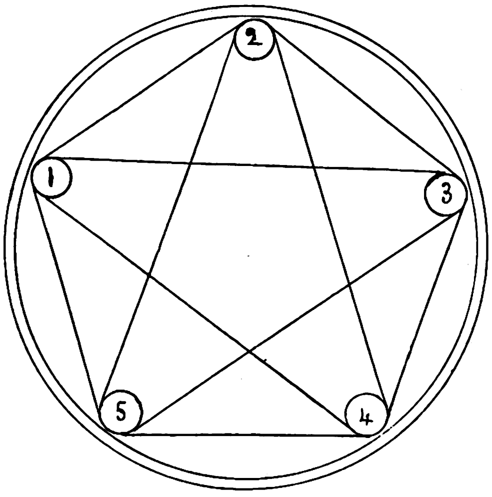

FIG. 151.—METHOD OF STAKING FREESIAS.

Birds and Fruit.—I admit that birds do a great amount of good in the garden, but the good they do does not counter-balance the harm they do to fruits. It is disastrous to see three parts of the best fruits of Doyenné du Comice and Glou Morceau Pears spoilt by birds; these are grown on cordons on the walls and have been netted, but it requires quarter-inch mesh netting to keep the tits out, and this means a big outlay. We are now receiving attention from starlings which cleared the fruits from two large Mulberry trees (to which I did not object), and are now concentrating their efforts on late dessert and cooking Apples (which I greatly resent). *A. B. Wadds, Englefield, Reading.*

[The fine fruits of Doyenné du Comice Pears sent by Mr. Wadds were badly pecked.—Eds.]

——It is, perhaps, with good reason gardeners fail to appreciate the good done by tits, therefore they consider ways and means of destroying the birds. In this district of North Wales tits are the most destructive birds we have; they particularly like Pears and are gluttons for Peas, stripping whole rows in an incredibly short space of time. Ordinary fruit netting is useless as a preventive, and the price of small-mesh netting is prohibitive on a large scale, therefore other means have to be taken. A good method of capturing the birds is to procure some mouse traps of the Nipper type; bait them with fairly old Peas, and place them among the spurs of the fruit trees or Pea sticks, to which the traps must be securely fastened. By this means I have caught many dozens of the marauders. *T. L.*

——I freely admit that birds do good in gardens, but, unfortunately, they also do a vast amount of damage. They not only attack fruits, but in many cases destroy the fruit buds. During the winter of 1926-1927, birds were most destructive in these gardens. It is well-known that bullfinches and sparrows are very partial to the buds of Plums and Damsons, but it was a new experience for me to find buds of Black Currants being attacked. If the damage had escaped notice the bushes would have been stripped in a few days, so thoroughly did these mischievous marauders do their work. It was not big-bud mite the birds were after, as our bushes are free from this pest. The damage is done just as the sap is rising and the buds commence to swell. The film from the protecting sprays is then released leaving the buds open to attack. It is a tedious process to fix strands of black thread over standard and pyramid trees, and everywhere this was done it proved to be of no avail, sparrows and finches treating such preventives with contempt. Flowers of Polyanthuses are partially destroyed by sparrows and starlings. All tender vegetable seedlings have to be most carefully protected. A bed of August-sown Turnips was demolished by finches. Blue tits pecked holes in choice Pears under the protection of double netting and wasp-proof bags. Ornamental berried shrubs are stripped, in some cases before the berries attain their autumn colour. It would be most useful to hear of any practical suggestion (other than slaughter) by which birds may be prevented from carrying on such wholesale destruction. Surely the birds were not short of water this season! *C. Ruse.*

——I was greatly surprised when I read your correspondent's note (p. 294) stating that blue tits did not touch his fruit. What do they feed on that it is so enticing as to cause them to leave fruit alone? Here, they are easily the very worst pests; indeed, I regard them as far more destructive than rats, which, with perseverance, are easily controlled. Our annual loss caused by blue tits spoiling Apples and Pears is heavy. We net all the trees possible with two thicknesses of netting, but the pests find a way in, and (some) out again. I know that tits devour insect pests, but the latter are under our control; and strange to say, at any other period except when Apples and Pears are ripening, the tits are conspicuous by their absence. I have many trees with nice crops where all the best coloured fruits have a hole in them; tits never go to the same fruit the second time. *J. Kneller, Penrhyn Castle Gardens, Bangor.*

Seed Drying.—We have read with much interest your description of a seed-drying invention (p. 279), but we hardly look upon it as anything particularly new. It appears to be somewhat on the same lines as a drying apparatus we have had on our premises for some years, but from your description, the drying process referred to would appear to be rather primitive compared with our system. *Watkins and Simpson, Ltd.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 18 AND 19.—A wonderfully fine exhibition greeted the Fellows on the above dates. The big hall at Vincent Square was well filled with effective and interesting displays, and although it was the occasion of the Orchid Show, Orchids were not the only feature. There were grand groups of Orchids from trade and amateur growers, good displays of Michaelmas Daisies, early Chrysanthemums, Roses, stove plants, late border flowers, alpine plants, Roses, and a superlatively fine display of vegetables from Aldenham.

The Orchid Committee granted seven awards of Merit, and the Floral Committee four, including a retrospective one.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. C. J. Lucas, Mr. Sidney W. Flory, Mr. Arthur Dye, Mr. Fred K. Sander, Mr. A. McBean, Mr. H. S. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. W. Hatcher, Mr. Robert Paterson, Mr. John C. Cowan, Mr. T. Armstrong, Mr. Fred. J. Hanbury, Mr. J. Wilson Potter and Mr. Stuart H. Low.

AWARDS OF MERIT.

Laelio-Cattleya Warrior (*C. Fabia* × *L.-C. Serbia*).—A showy Orchid with wide, clear mauve sepals and petals, and a big, frilled lip that is Tyrian-purple on the front portion and orange-yellow in the throat. The spike carried four fine blooms. Shown by Messrs. J. AND A. McBEAN.

Cattleya Princess Royal (*C. Fabia* × *C. Hardyana*).—A splendid Orchid with large, rich purple flowers, the flattish lip being a very rich, bright purple with an old gold throat. Shown by Messrs. J. AND A. McBEAN.

Laelio-Cattleya Valencia (*L.-C. Soulange* × *C. Dinah*).—This has a large and finely-formed flower with very broad, purplish-mauve petals, and a handsome rosy-purple lip with a pale yellow throat; the lip is wide and prettily frilled. Shown by Messrs. J. AND A. McBEAN.

Laelio-Cattleya Mrs. Medo, The Node var. (*C. Venus* × *L.-C. Luminosa aurea.*)—This effective, large-flowered hybrid has very substantial blooms of excellent form. The sepals and petals are a curious shade of bronzy-yellow, the former having deeper veining and shading at the sides and apex. The fine lip is ruby-coloured, with small, purplish-mauve side lobes. Shown by Mrs. CARL HOLMES (gr. Mr. Penton), The Node, Welwyn.

Cypripedium Gowerianum var. Mrs. Leonard Dixon (*C. Lawrenceanum Hyeanum* × *C. Curtisii Sanderae*).—A beautiful form of a fine hybrid. The dorsal sepal is white with green stripes, the lip pale apple-green, and the petals green, shading to white at the tips, and studded with fine green hairs. Shown by Messrs. SANDERS.

Laelio-Cattleya Hilary (*L.-C. Soulange* × *C. Fabia*).—In this beautiful hybrid the flowers are of fine size and wonderful substance. The sepals and petals are of a pleasing shade of purplish-mauve, while the waved and frilled lip is bright purple with mauve edge and golden veins in the throat.

Cattleya Fabia var. Queen Elizabeth (*C. Dowiana* × *C. labiata var.*).—A showy hybrid with broad, clear purple sepals and less broad petals of similar colouring. The big lip has a frilled and purplish-mauve margin, but the chief colour is ruby-purple, shading to purple, with old gold markings in the throat. Shown by Messrs. SANDERS.

GROUPS.

Messrs. CHARLESWORTH AND Co. had a large and very beautiful group of Orchids in which the central feature was a fine display of well-grown Dendrobium Phalaenopsis, interspersed with spikes of Odontoglossum crispum xanthotes. At each end of the group there were collections of Odontoglossums, wherein conspicuously beautiful kinds were O. grande, O. Phillipsianum aureum, O. Alvara, O. Dictune, O. Horus, first-rate varieties of O. crispum, O. Serapis, O. Crethus and the old O. Wilckeanum aureum, together with Odontioda Acis, O. Vesuvius, the very beautiful Odontonia Alesia and the small-flowered, but elegant, Oncidioda Charlesworthii. Between the Odontoglossums and Dendrobiums, and against a background of Oncidium varicosum Rogersii, were fine examples of the yellow Laelio-Cattleya Pyramus, L.-C. Orebus, L.-C. Cynthia, L.-C. Miranda, and L.-C. Soulange, together with Brasso-Laelio-Cattleya Mercia, Brasso-Cattleya Mrs. Chas. Marron, B.-C. Viscount Toda, Cattleya amabilis and C. amabilis alba. Other interesting plants in this fine exhibit were Miltonia Princess Mary, Coelogyne Brymeriana, with two long spikes; the pale yellow Spathoglottis edinensis; the quaint Dendrobium Coelogne, with a black lip; Cypripedium Maudiae and Vuylstekeara rubra.

Another large exhibit was the one from Messrs. SANDERS, in which the plants were thinly disposed so that the whole of each specimen could be seen. Oncidium tigrinum was used as a background to a fine lot of Cattleya Fabia in variety, while another grouping consisted of Vanda coerulea, Cattleya Hardyana and C. Sylvia. Laelio-Cattleya Carmincita was finely represented, as also were L.-C. Regina var. Cloth of Gold; the yellow Cattleya Veiris, Brasso-Cattleya Fusilier, and the pure white Cattleya Shrewsbury. Other good things in this display included several examples of Cypripedium Fairrieanum, the bold C. Gowerianum var. Mrs. L. Dixon, Angraecum Ellisii with two spikes of its long-spurred, white flowers; a fine example of Rodriguezia secunda, with eight spikes of its rosy flowers; the old and rarely seen Barkeria spectabilis; Oncidium citrinum, and the fine Cymbidium Tracyanum.

Messrs. J. AND A. McBEAN had a very pretty exhibit, and arranged all their plants over green moss. The plants were all admirably arranged, and a few outstanding specimens were those of Laelio-Cattleya Warrior, L.-C. Valencia, L.-C. Profusion in variety; Cattleya aureata, C. amabilis alba, C. Fabiata, C. Fabia alba, C. Hardyana and the golden C. Aeneas, C. aurea and C. Amur. Odontioda Bradshawiae was represented by a large-branched spike, as also was Odontoglossum Jasper, while Oncidium incurvum, O. Forbesii, Odontioda Devossiana, Odontoglossum Theseus, O. Beulah and O. Uro-Skinneri var. Black Prince were other good subjects. Cypripediums of good quality were also included and among smaller subjects we noticed Cochlioda Noezliana, Epidendrum vitellinum majus, Sophronitis, grandiflora and Miltonia Wm. Pitt.

Messrs. STUART LOW AND Co. associated their Orchids with Ferns and small Palms, and made up a very pretty exhibit in which there were capital examples of Laelio-Cattleya Haroldianum, L.-C. Cantab, L.-C. Ortega, L.-C. Profusion, L.-C. Herald, Cattleya amabilis alba, Sophro-Laelio-Cattleya Goodsonii, with three of its crimson flowers; Brasso-Laelio-Cattleya Baroness, Cymbidium Orion, Angraecum Ellisii, Vanda coerulea, Dendrobium densiflorum and the very pretty, little Laelia Dayana delicata.

Mr. HARRY DIXON contributed numerous Cypripediums and examples of Brasso-Cattleya Nestor, Cattleya amabilis alba, Oncidium incurvum album, and Odontioda Beechense.

Messrs. J. CYPHER AND SONS' exhibit consisted chiefly of Cypripediums, and in their collection we noticed good examples of C. Madame A. Fevrier, C. Fair-Maud, C. Ballet Girl, C. Felicity, C. Olivia, C. Royal George, C. Maudiae and C. Germain Opoix. Odontoglossum grande, Oncidium varicosum Rogersii, Cattleya Enidsonii and the old C. Bowringiana were also exhibited.

A bold exhibit of well-grown plants was staged by Messrs. COWAN AND Co., who displayed their plants over a groundwork of green moss and Ferns. Graceful spikes of Oncidium varicosum Rogersii, Odontoglossum Pescatorei and O. crispum xanthotes formed a charming background for Cattleya Mantinii, C. Fabia, C. Omar, C. Daedalus, Laelio-Cattleya Queen Mary, and the handsome L.-C. Hilary, which is derived from L.-C. Soulange and C. Fabia. Coelogne Mooreana was represented by a plant with two spikes, and there were also capital examples of Cypripedium Warrior, C. Mastiff, C. Stamperland, C. Thalia var. Mrs. Wellesley, C. Bedfordiae, C. Prince Albert and C. Troilus var. Imperialis; Odontoglossum Col. Leith was also shown; this is the result of crossing O. Rossii with O. Uro-Skinneri; we also noticed a plant of the interesting, but small-flowered, Acampe papillosa, with axillary spikes of small green and white flowers.

Messrs. A. J. KEELING AND SONS exhibited a few Orchids, and among these the most notable were Cattleya Mrs. Medo var. Brilliant, with yellow sepals and petals and a brilliant ruby lip; Brasso-Cattleya Nestor and Cypripedium Lydia. Messrs. BLACK AND FLORY showed Laelio-Cattleya Edzell and its shapely Langley variety; Brasso-Cattleya Alderman, Brasso-Laelio-Cattleya Vera, the brilliant Sophro-Laelio-Cattleya Eros, and a small plant of Miltonia Sanderiana. Messrs. SUTTON BROS. also exhibited a few Orchids, while BARON BRUNO SCHRÖDER (gr. Mr. Shill), Dell Park, Englefield Green, showed cut flowers of two new yellow-flowered Brasso-Cattleyas.

The Orchid Challenge Cup, offered for the best exhibit arranged by an amateur on a space not exceeding sixty square feet, was awarded to J. J. JOICEY, Esq. (gr. Mr. J. Mackay), The Heights, Witley, Surrey, for a capital exhibit of well-grown plants, all well-arranged. Conspicuously good were Vanda Sanderiana, Vanda coerulea (one of the plants carrying three spikes), Brasso-Cattleya British Queen var. Admiration, the delightful Pleione lagenaria, Cypripedium Fairrieanum, C. insigne Sanderae, C. Boltonii, C. Madame A. Fevrier, Cymbidium Tracyanum, Miltonia Beau Brummel, and the old, small-flowered Selenipedium Schlimii.

Sir JEREMIAH COLMAN, Bt. (gr. Mr. J. Collier), Gatton Park, Reigate, had an interesting group in which there were large specimens of Cattleya Browniae superba, C. Bowringiana lilacina, C. labiata coerulea and Cypripedium Maudiae. There was also a cut spike of Vanda Luzonica and pretty plants of Promenaea citrina; the curious Bulbophyllum virescens and Cirrhopetalum ornatissimum.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. A. Turner, Lady Beatrix Stanley, Mrs. Ethel M. Wightman, Mr. Donald Allan, Mr. J. M. Bridgeford, Mr. D. Ingamells, Mr. Hugh Dickson, Mr. Courtney Page, Mr. R. Findlay, Mr. James B. Riding, Mr. W. B. Gingell, Mr. A. E. Vasey, Mr. D. B. Crane, Mrs. Helen Lindsay Smith, Mr. Charles E. Pearson, Mr. E. R. Janes and Mr. W. D. Cartwright, Secretary.

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. W. J. Bean, Mr. R. C. Notcutt, Hon. Henry D. McLaren, Mr. James Hudson, Mr. George Harrow, Mr. F. G. Preston, Mr. Arthur Bedford, Mr. T. Hay, Mr. E. A. Bowles, Mr. Charles T. Musgrave, Sir William Lawrence, Bt., Mr. C. J. Lucas and Mr. N. K. Gould, Secretary.

AWARDS OF MERIT.

Chrysanthemum Mrs. F. C. Maples.—This is a handsome Japanese variety of the best exhibition type and size. The flower is made up of very broad florets of bright yellow colour. The flowers are broad and deep and an occasional floret curls gracefully, adding charm of outline to the blooms. Shown by Mr. E. H. PEARCE, Long Sutton Gardens, Basingstoke.

Chrysanthemum Pinkest.—A valuable Japanese variety of the size valued for marketing purposes. The round blooms are compact and the stiff florets are lightly rolled. The colour is a deep mauve-pink. Shown by Mr. H. SHOESMITH, junr.

Nerine Wales.—This handsome variety was sent to Wisley for trial by the late Rev. JOSEPH JACOBS. It has a large umbel of orange-red flowers which have a flushing of rose. The ends of the floral segments are gracefully undulated. Sent by the DIRECTOR, R.H.S. Gardens, Wisley.

Helianthemum Libanotis var. latifolium.—On June 15, 1926, an Award of Merit was given to "Halimium libanotis," subject to verification of name. We are now informed that Dr. Otto Stapf has decided that the name should be Halimium Libanotis var. latifolia, and the award has been confirmed. According to the *Index kewensis,* Halimium Libanotis is, correctly, Helianthemum Libanotis. The plant under notice is a broad-leaved variety of the species which is nearly allied to Helianthemum umbellatum, but differs in having terminal yellow flowers, usually solitary, with smooth sepals. Shown by Sir Oscar Wanburg, Headley, Epsom.

For Trial at Wisley.

Aster Silver Spray.—A very graceful A. cordifolium variety which bears arching sprays of comparatively small flowers which are white with the slightest suggestion of a lavender blush. Shown by Mr. Ernest Ballard.

Groups.

The several collections of Chrysanthemums were composed of very bright and attractive flowers. Mr. A. G. Vinten had a considerable group of disbudded blooms of the type which finds a ready sale in the markets. We understand that these grand blooms were gathered from the open ground where they had received occasional protection by means of overhead rollers of tiffany. The chief varieties were Almirante, Mayford Yellow, Red Almirante, Royal Salute, Mrs. E. Arkwright and Mrs. Hutt.

An entire length of tabling immediately inside the hall was filled with Chrysanthemums by Messrs. Keith Luxford and Co., and Messrs. Yandell. The former had a very graceful display in which we especially noted Harry Clements, large yellow; Thalia, crimson with a gold reverse; Pink Delight and Cranford Pink, amongst the disbudded varieties; and Cranford Cream, Phoenix, Harvester, Mrs. Jack Pearson and Crimson Circle of the spray varieties. Mr. Yandell had nearly all spray varieties, of which Goldfinder, Phoenix, Mrs. Phil Page, Hubert and Delice were very attractive. Sanctity and Armorel well represented the disbudded type.

Trees and shrubs bearing autumn colouring also were a bright display. Messrs. J. Cheal and Sons had an extensive exhibit in which there were large sprays of Quercus rubrum, Acer japonicum laciniatum, A. rubrum, Ribes americanum, Berberis Thunbergii and Euonymus alatus in most beautifully coloured sprays. Rhus Cotinus and Berberis Autumn Cheer provided gorgeous colour in the interesting exhibit of Messrs. R. Veitch and Son, who also showed Arbutus Unedo rubra, Colletia armata, many spikes of Nerine Bowdenii and the Belladonna Lily.

Michaelmas Daisies were shown in considerable quantity. In a large floor group Messrs. Barr and Sons displayed many sprays of their admirable variety Barr's Pink, with Hilda and Nancy Ballard, two good pink sorts with smaller flowers, and also Blue Gem, Mrs. George Monro, white; Rachel Ballard, rosy-mauve; Little Boy Blue, Pink Perfection and Mons.

In an adjoining group, Mr. T. Bones showed Pink Perfection, Sirius, Mons, Little Pink Lady, Sonia and a good Aster Amellus seedling, all of varying shades of pink.

As a background to their collection of miscellaneous border flowers, Messrs. Bakers, Ltd., had goodly stands of unnamed varieties of Michaelmas Daisies, which well set off the vases of Kniphofias, Heleniums, Delphiniums and other flowers. Tall stands were filled by Messrs. Wm. Wood and Sons with good sprays of Climax, Beechwood Pink, Mrs. George Monro, Acme and other good Michaelmas Daisies.

In the annexe, Mr. Ernest Ballard had an attractively arranged collection of Michaelmas Daisies which included tall stems of the graceful variety Silver Spray, October Dawn, Blue Gem, Mrs. George Monro, Empress of Colwall, double mauve; Dick Ballard, double rosy-mauve; Powder Puff, double old rose; and Ruby Tips.

A number of good hybrids of the tall-growing Lobelias, shown by Messrs. B. Ladhams, Ltd., illustrated desirable advances in colouring, especially in the rose-pink shades. They also staged vases of Coreopsis auriculata superba, Lavatera Olbia, Salvia uliginosa and Meconopsis in variety, with sprays of hardy shrubs. The Misses Hopkins had a pretty little rock garden, suitably planted, while in a larger rock garden, Mr. F. G. Wood displayed Viola Ashtead Purple, some early-flowering Primroses, Gentiana sino-ornata and other subjects, and also showed herbaceous flowers. Messrs. Isaac House and Son continue to display excellent flowers of their Scabiosa caucasica varieties, with Scabiosa anthemifolia, Kniphofia erecta, K. Etna and K. grandis globosa. Mr. J. J. Kettle had a good collection of sweet Violets which included the varieties Princess Mary, Princess of Wales and Lady Shaftesbury. Messrs. Reamsbottom and Co. had a good range of their St. Brigid Anemones.

An admirable display of Dahlias was made by Messrs. Dobbie and Co. Chief amongst the Collerette varieties were Glen Devon, deep rose with white quills; Glencoe, deep scarlet, with scarlet and white quills; Glen Sannox, bright scarlet, with white quills; and Aaron, bright rose with white quills. The useful miniature Paeony-flowered type was also well represented, and these varieties included Our Annie, Chelsea and Joan Fife. Mr. J. T. West also contributed very good Dahlias, and his collection included Treasure and Ophelia of the miniature Paeony-flowered section, and Shining Sun, Lady Godfrey Faucett and Blanche Rowland of the small Decoratives. Dahlias and Roses were shown by Messrs. Rich and Cooling.

Roses were staged in considerable beauty by several growers. Mr. George Prince had a handsome collection which included vases of Madame Butterfly, Lady Inchiquin, Golden Emblem, Shot Silk, Covent Garden and Ophelia. The chief varieties set up by Messrs. B. R. Cant and Sons were the rich yellow Cecil, Etoile d'Hollande, Mrs. Beatty, of rich golden colour; Isobel, Mrs. George Norwood and Lady Inchiquin.

In his collection of Roses, Mr. J. H. Pemberton included a number of free-flowering varieties such as Pax, Vanity, Felicia and Cornelia, and also staged vases of Los Angeles, Mermaid and other H.T. varieties. The tall pillars arranged by Messrs. D. Prior and Son contained good blooms of Hugh Dickson, Sunstar, Los Angeles, Madame Edouard Herriot, Shot Silk and Madame Abel Chatenay.

An attractive exhibit from the Duke of Wellington (gr. Mr. H. Beckingham), Ewhurst Place, Basingstoke, was made with Nerine Bowdenii, Amaryllis Belladonna, Humea elegans and fruiting sprays of Pernettya mucronata. In a corner, Messrs. L. R. Russell, Ltd., made up a very graceful group with well-grown plants of Alocacias, Anthuriums, Codiaeums (Crotons), various Bromeliads, Aralia elegantissima, Adiantum Glory of Moordrecht, and Fittonias.

Carnations of the accustomed quality and quantity were staged by Messrs. C. Engelmann, Ltd., Messrs. Stuart Low and Co., and Messrs. Allwood Bros. The first-named included vases of Orange Sunstar, Spectrum, Red Laddie and Dorcas. Messrs. Stuart Low and Co. gave prominence to Melchet Beauty, an attractive Fancy variety, Betty Low, of vivid rose-cerise colour, White Pearl and Philip Sassoon. In the annexe, Messrs. Allwood Bros. staged vases of Topsy, Laddie, Red Laddie, Jessie Allwood and Maud Allwood, with a front row of Dianthus Allwoodii.

There were two very interesting collections of Sempervivums. In connection with Dr. R. Lloyd Praeger's lecture, the Director of the Royal Botanic Gardens, Kew, sent pot plants of many new or rare species and varieties. Amongst the plants were those named Aeonium holochrysum, A. arboreum var. purpureum, A. balsamiferum, Monanthes polyphylla, M. muralis, Greenovia aurea and G. aurea × aizoon. H. T. Weeks, Esq., Northayke, Rusthall Park, Tunbridge Wells, showed in a pleasantly-designed little rockery, good examples of Sempervivum arachnoideum minus, S. Pomelii, S. Pregnarium, S. Webbianum and S. triste.

Fruit and Vegetable Committee.

Present: Mr. C. J. A. Nix (in the chair), Mr. J. Cheal, Mr. P. C. M. Veitch, Mr. George F. Tinley, Mr. George Kelf, Mr. A. Poupart, Mr. H. Markham, Mr. W. H. Divers, Mr. E. A. Bunyard, Mr. E. Beckett and Mr. A. N. Rawes, Secretary).

Mr. W. F. Macey, Donnington Road, Worcester Park, showed a seedling Apple, much after the style of Allington Pippin, but not so good; another seedling Apple came from Mr. J. W. Boyce, Welney, Norfolk, which appeared rather to resemble the old Norfolk Beefing type. Mr. A. Malpass, Fleet, Hampshire, showed a seedling Apple named Malpass Seedling, which was considered no advance upon existing varieties of similar type and season. Sir William Lawrence, Bt., Burford, Dorking, exhibited two varieties of Celery, the Fordhook and the Self-blanching Golden Plume. These varieties are grown in Canada and the Northern United States of America, practically to the exclusion of other sorts; neither Celery requires to be earthed up or wrapped in paper bands. Golden Plume is ready for consumption in October-December, while Fordhook is lifted and stored in a frost-proof shed for use in the New Year.

Groups.

Mr. R. C. Notcutt staged a splendid collection of Apples and Pears, the exhibit being tastefully decorated with various berried shrubs. Interesting varieties were Cullen Grise (a promising "market" Apple), Guelph, Bismarck, Herring's Pippin and Lord Rosebery—all comparatively new introductions of merit. Other good dishee of Apples were Peasgood's Nonesuch, Ellison's Orange, Blenheim Pippin, Cockle Pippin, Annis Elizabeth and Crimson Bramley. Among Pears Pitmaston Duchess, Conference, Marie Benoist and Catillac were noted as of outstanding quality and good size.

A magnificent exhibit of vegetables was arranged by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree. It is rather difficult to state that any one of the Aldenham exhibits is better than has ever been shown, but we certainly think this was the finest we have ever seen Against the trellis background were arranged coloured Runner Beans, superb Leeks, Capsicums and Chilies, Tomatos, Celery in variety and of first-rate quality; Cauliflowers, Beets, Aubergines and Red Cabbage. In the foreground abundant colour was supplied by Tomatos in great variety, Capsicums, splendid Carrots, Long Beet, coloured Potatos, Onions, yellow Turnips and Radishes; white Potatos were equally well shown, and there were very fine specimens of Ailsa Craig Onions, Cardiff Castle and Ideal Cucumbers, Holborn Exhibition, Filbert and Dwarf Gem Brussels Sprouts, together with Salsafy, Black Spanish Radish, Shallots, Mushrooms (as growing), white Cucumbers, Florence Fennel, Celeriac, Vegetable Marrows, Lettuces, Savoys, Curled Kale, white and Chinese Artichokes, Spinach, Maize, Chicory, Endive, Globe Artichokes, Long and Round Turnips, The Bell and Selected Gladstone Peas, and even Mustard and Cress. There was not a weak dish in the whole of this large and superb exhibit.

BIRMINGHAM AND MIDLAND GARDENERS'.

The first meeting of the autumn session took place on Monday, October 10, at the offices of the Chamber of Commerce, New Street, Birmingham. The President, Dr. Jessie Bayliss Elliott, as in former years, delivered the opening lecture, and chose for her subject "The Fungus Guests of Orchids and Other Plants." The lecture was illustrated with lantern slides.

Needless to state, such a subject given by so eminent an authority as Dr. Elliott of the Birmingham University proved highly instructive, and the lecture was fully appreciated.

The Association reports healthy progress; thirty new members were admitted during the winter of 1926-27, and ten new members nominated for election at the opening meeting, on October 10. Several places of interest were visited during the summer months, and a scheme is being arranged under which prizes and certificates will be awarded for the best essay given upon the series of lectures attended during 1927 and 1928.

The Chairman appointed for the fortnightly meetings is Mr. Joseph Smith, Superintendent of the Parks and Cemeteries Department of the city.

NATIONAL AURICULA.

(Northern Section.)

The Annual General Meeting was held at Houldsworth Hall, Manchester, on Saturday, September 24, 1927. Mr. C. W. Needham presided. There was a good attendance of members. Sir Daniel Hall was elected a Vice-President.

The Secretary, in his report for the year, mentioned that fourteen new members had joined since the last show. As the result of the report of the show, which appeared in *The Gardeners' Chronicle*, he had received numerous letters from various parts of the country, all showing the increased interest now being taken in the Auricula. The new *Annual Record* of the Society will be ready about the end of October and will contain a long and interesting account of the early history of the Auricula, and an illustrated article on cross-fertilisation. Copies may be had from the Secretary, Mr. C. F. Faulkner, 2, Booth Street, Manchester, price one shilling each.

The Chairman gave an interesting account of the John Innes Institute, setting forth its recent intention to preserve and cultivate the old florists' flowers because, amongst Auriculas especially, many standard varieties of great merit as well of historic interest are disappearing. It is of the utmost importance in the interests of floriculture generally that the old types of flowers representing the efforts of a long line of florists should be maintained. He appealed to members for their support, asking them to send plants of the present and of the old-time types, and especially of the older sorts that are becoming obsolete, to the Director of the John Innes Institute, who promised them a hearty welcome and a happy home.

The fifty-sixth annual show will be held on April 28 or May 5, 1928, the choice of dates being left to a ballot of members nearer the time.

NATIONAL CHRYSANTHEMUM.

At the meeting of the Floral Committee held at the Royal Horticultural Hall, Westminster, on Monday, October 10, the following Certificates were granted to novelties:—

First-Class Certificates.

Bonnie Lass. II. 1*b*.—A useful early variety with shapely flowers of a soft pink colour, the small central florets being tipped with greenish-gold.

Torch. II. 1*b*.—A chestnut-bronze variety with gold reverse. Flowers of good size and form and borne on long, stiff stems which, like the foliage, are dark.

Purple Robe. II. 1*b*.—A very distinct variety shown now in better form and colour than a year ago. The flowers are of medium size and good in spray form, and the colour is rich claret-purple, the ruddy hue being brightest on the young flowers. The foregoing three varieties were shown by Mr. A. W. Thorpe, Lichfield.

Daffodil. II. 1*b*.—A very fine, early, golden-yellow variety of compact reflexing form. Shown by Mr. H. Shoesmith, Jun.

Sungold. II. 1*a*.—This is a handsome, large-flowered, decorative variety of Japanese form, with broad florets that are rich golden-yellow, faintly shaded or speckled with chestnut-red. Shown by Messrs. Keith Luxford and Co.

At the meeting of the Floral Committee, held at the Royal Horticultural Society's Hall, Westminster, on October 17, the following novelties were certificated:—

First-Class Certificates.

Pinkest. II. 1*b*.—A finely-formed, medium-sized flower and of good substance; the slightly quilled and pointed florets are of a deep mauve-pink colour. Shown by Mr. H. Shoesmith, Junr.

Mrs. F. C. Maples. II. 1*a*.—A large and handsome Japanese variety of excellent exhibition style. The broad florets are rich golden-yellow. Shown by Mr. E. H. Pearce, Long Sutton Gardens, Basingstoke.

Cheerful. V. 2*a*.—This single, terra-cotta variety was raised by the late Mr. W. J. Godfrey. It is good in spray form, has a faint rosy sheen, and a narrow yellow zone round the disk. Shown by Messrs. Cragg, Harrison and Cragg.

Jim Stacey. II. 2*a*.—A large exhibition variety of incurving Japanese style. The florets are broad and of a clear yellow colour. Shown by Mr. H. J. Jones.

UNITED HORTICULTURAL AND PROVIDENT.

Mr. Charles H. Curtis presided at the monthly meeting held at the R.H.S. Hall, on October 10. Six new members were elected, one member withdrew interest from his deposit account amounting to £3 7s. 0d., and two members withdrew sums from their deposit accounts amounting to £86 18s. 3d., while the sums of £10 19s. 2d. was passed for payment to the nominee of one deceased member, and £4 13s. 9d. paid out on account of a deceased, lapsed member.

Sick-pay for the month on the Ordinary side came to £106 8s. 2d., and on the State side to £96 11s. 8d.; Maternity claims totalled £9 10s. 6d. The sum of £49 5s. 6d. was granted to thirteen members for dental and optical treatment, and twenty other cases were considered.

Obituary.

Dr. Benjamin Daydon Jackson.—It was with very deep regret we received the news of the death of Dr. Benjamin Daydon Jackson. He was knocked down by a motor car at Buckingham Gate, on October 1, and died in Westminster Hospital on October 12. Dr. Daydon Jackson was Secretary of the Linnean Society from 1880 until 1902, when he became General Secretary, a position he occupied until 1926, when he retired from secretarial work and became Curator of the Linnean Collections at Burlington House. His knowledge of plant history was encyclopaedic, and his memory, right up to the time of his accident (in his eighty-second year), was so extraordinarily good as to be almost uncanny. In celebration of his eightieth birthday, and on the occasion of the anniversary meeting of the Linnean Society on May 26, 1926, the many admirers of Dr. Daydon Jackson presented him with his portrait, painted by Mr. Ernest Moore, and many eminent scientists paid high tribute to the splendid services he had rendered to botanical science. Although his fine services to the Linnean Society for so long a period will never be forgotten, it is probable that the greatest monument to Dr. Jackson's knowledge, skill and capacity for work is the *Index kewensis.* This work is of outstanding importance and usefulness to botanists in all parts of the world, to horticulturists and horticultural journalists. It was a huge undertaking and one on which Dr. Daydon Jackson was engaged for nearly fourteen years. He also wrote *Linnaeus, the Story of His Life; Notes on the Catalogue of the Linnean Herbarium; Catalogue of Linnean Specimens of Zoology; Guide to the Literature of Botany;* the extremely useful *Glossary of Botanic Terms*; and biographies of Gerard, Turner and Bentham. He edited several botanical works, and was the author of many other publications than those quoted, chiefly on botany and botanical history. He only missed one general meeting in the whole of his service with the Linnean Society. At the time of his death he had in hand a fourth edition of his *Glossary of Botanic Terms* and revised the proofs just before he died. He also had undertaken a dictionary of genera named after individuals which was not finished. Dr. Jackson's life was a very full one, but no matter how busy, or how great the task on which he was engaged, he remained one of the kindliest and most accessible of men, and would take infinite pains to give the humblest Fellow all the information asked for. On the occasion of the Linnean bicentenary celebrations in 1907, Dr. Jackson was created a Knight of the Swedish Order of the Polar Star, but although he received few honours from his own countrymen, he received what he prized highly—the affection and esteem of all who were acquainted with him and his work. An appreciation of Dr. Benjamin Daydon Jackson, and a reproduction of the presentation portrait, appeared in our issue of June 6, 1926.

ANSWERS TO CORRESPONDENTS.

Amaryllis, Nerine and Hippeastrum Leaves.—*M. A.* The "white fungoid growth" on the leaves sent is some extraneous inorganic substance, and is not due to any fungous attach. It is impossible to say what is the matter from the material sent.

Elephant Hawkmoth Caterpillar.—*A. T. J.* The caterpillar reached us in a black and putrid condition; its size, however, and the short horn above its tail, showed that it was a larva of the Large Elephant Hawkmoth (Eumorpha elpenor), one of the handsomest of our native Hawkmoths, and by no means uncommon. The foodstuffs of the larva are (wild) Bedstraws, Willowherbs, Convolvulus, Wild Madder and Purple Loosestrife, etc., and (cultivated) Balsams, Vine, Virginian Creepers, Fuchsias, Enchanter's Nightshade, Lettuce, etc. It pupates in the earth in September or October, and the moth flies about the following Whitsuntide. The larvae are usually brown or green, marked with black and with two sham, black and white eyes near the head, which are most obvious when danger threatens. N.B. — Correspondents sending us caterpillars and other *wingless* insects for identification are particularly requested to send them alive in small *tin* boxes, with some fresh (but not wet) leaves or grass to act as loose packing and shock-absorbent to the specimens during transit. Unless the box is very small it should not be perforated but should always be wrapped in paper, preferably brown.

Grapes Discoloured. — *M. S.* The discoloration on the berries may be due to rubbing or rather heavy syringing while the Grapes were quite young. We could find no trace of disease.

Licence for a Gardener.—*A. W.* A gardener comes within the definition of a "male servant" in the Act, and a licence is therefore required.

Names of Fruits.—*G. H. E.* Durondeau; 2, Le Lectier; 3, Beurré Hardy; 4, Conference. *H. P.* Black Norman.—*Lost-one.* 1, Bramley's Seedling; 2, Newton Wonder; 3, White Westling; 4, Striped Beefing; 5, Malster.—*G. B. G.* 1, 4 and 7, numbers detached owing to bad packing; 2, Bramley's Seedling; 3, Golden Noble; 5, Mère de Ménage; 6, Dumelow's Seedling; 8, Adams's Pearmain; 9, Blenheim Pippin.—*E. R. K.* 1, Winter Strawberry; 2, Keswick Codlin; 3, Small's Admirable; 4, Worcester Pearmain; 5, small, not recognised; 6, White Nonpareil; 7, Green Balsam; 8, Hawthornden; Winter Greening; 10, Cellini; the red fruit is Rubus illecebrosus, popularly called the Strawberry-Raspberry.—*A. M.* Ribston Pippin.—*J. B.* 1, Ribston Pippin; 2, Worcester Pearmain; 3, not recognised.

Seedling Apple.—*H. A. S. S.* The seedling Apple is quite a fair early cooking variety, but too soft to keep for any length of time. It is pleasantly acid in flavour, which, together with the shape of the fruit, suggests that Dumelow's Seedling (Wellington) was one of the parents. We do not think it is of any particular commercial value, but if it crops well it is worth retaining in the garden.

Communications Received.—E. T. R.—E. T. P.—C. H. C.—Constant Reader.—E. G.—W. W.—D. C.—T. S.—S. P. S.—N. C. V.—H. H. B.—R. K.—C. F. W.—F. J.—J. F.

THE
Gardeners' Chronicle
No. 2131.—SATURDAY, OCTOBER 29, 1927.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 45.5.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 26, 10 a.m. Bar. 29·9°. Temp. 58°. Weather, Dull.

Strawberry Cultivation (II).

THE observations on the seasonal development of the root system and crown of the Strawberry make it all but certain that time of planting must have a marked effect on the first season's crop. Experiment confirms this deduction. Series of rooted runners (of Royal Sovereign) were planted out at monthly intervals from August 8 to October, and others were put in on December 18 and March 18. The August-planted runners altogether outstripped those planted at the later dates. Both the root and the crown development of the former surpassed altogether that achieved even by the runners planted a month later (September 8). The superiority was even more conspicuous when the plants came into flower, whereas those planted in the previous August bore each from eight to ten strong flower trusses, those planted in September had only two or three per plant. It follows therefore that Strawberry runners should be planted out in their permanent quarters as early as possible. Experiments were next made with the object of ascertaining the best method of planting. Some batches were planted shallowly with the base of the crown resting on the soil. Others were planted more deeply so that the soil reached up to the leaf bases. Others again were planted deeper so that the crown was just covered, and another batch was treated in the Canadian method, that is, by shortening the runner roots, the crown being then planted at normal depth. Root shortening produced no ill effect. New roots were developed at the cut ends within six weeks of planting, and the new roots, running out in a horizontal direction, provided a good anchorage for the plant. Hence, in soils exposed a good deal to frost it might be worth while to adopt this system in order to reduce the lifting of the crowns out of the soil, which lifting happens after winter or spring frosts. As to depth of planting, the results showed that deep is better than shallow. Planting so deep that the crowns are covered may lead to a rotting of some crowns, but otherwise results in the production of good plants. Speaking generally, however, normal planting, that is, setting the crowns so that the soil reaches to the bases of the leaves, produces the best results. The surface-rooting habit of the Strawberry, to which reference was made in Part I[*] (see p. 319), must evidently be taken into account in the practice of cultivation. Hoeing has to be done, but even when done with the utmost care the effect is bound to be some root disturbance and particularly damage at the vital point, mainly where the root comes away from the crown. Therefore, since root development is active after cropping has concluded, hoeing should be done as early as possible, and soil should be drawn up to the crowns after a row of plants has been hoed. Another reason for hoeing the Strawberry plantation early is that the least permanent damage is done to the crop when the root disturbance and injury incidental to hoeing occur soon after cropping. An equal amount of damage done by hoeing in the spring has a far more serious effect on the plants. Whilst on the subject of cultivation it may be pointed out that the authors, Messrs. Ball, Mann and Staniland, have shown that Strawberry roots are very readily damaged by water-logging of the soil—a fact of which account should be taken in deciding how long a Strawberry plantation should be left before it is replaced by a fresh one. Lastly, it is to be borne in mind that where late planting cannot be avoided the plants, when they flower, should be deblossomed at an early stage. This practice leads to the production of strongly-bearing plants in the following year. So much for methods of cultivation; but what of the plant cultivated? Enquiry and observation have led Messrs. Ball, Mann and Staniland to recognise that wide differences exist between groups of plants belonging to one and the same variety. Some groups may be vigorous, others weak. In other words, it has to be recognised that a number of strains may and often do exist within one variety. The remedy is, of course, to be sought along the lines of elimination. Only strong and prolific plants should be used for propagation. Where this is done the parental vigour is, as the authors show, perpetuated in the runner plants. Another means of ensuring that plants raised from runners shall be vigorous is to restrict the number of runners on plants used for the purposes of propagation. When, say, the first three runners only are allowed to remain, the resulting plants are found to be more vigorous and prolific than when more runners are preserved and taken; needless to say, the runners should be not only restricted in number, but should be taken from a vigorous "parent." As the authors point out, if the public insist on cheapness it cannot expect that runners should have been produced under a meticulous system of selection; but the instructed public will undoubtedly be prepared to pay a higher price for better plants, and we therefore hope that growers will take all the steps necessary to provide rogued and selected runners for those who are willing to pay a reasonable price in return for the extra labour involved. The subject of strain runs into that of disease. Of diseases of the Strawberry, several of serious nature are known. There is, for example, "Red Plant," a malady which is now wide-spread. The disease is easily recognised in spring by the malformation of leaves and weakness of blossom. Flower trusses may be of almost microscopic size and the leaf blades irregular and crumpled. Some varieties, Royal Sovereign for instance, show, moreover, an intense red coloration of the small and malformed leaves—others, like Sir J. Paxton, do not exhibit the discoloration. What may be an extreme form of Red Plant is known as Cauliflower disease—so named because the plant when in flower looks somewhat like a Cauliflower. There is evidence which is strong, albeit not conclusive, that Red Plant is due to the invasion of the Strawberry plant by the eelworm, Aphelenchus fragariae. Plants exhibiting the symptoms of these diseases should, of course, be discarded. Then there is the Strawberry aphis (Capitophorus fragariae) which lives all the year round on Strawberries, walks along the runners and infects the young plants. Where Strawberries are badly affected by this aphis the plant has a flat appearance, its leaves are crinkled and cupped, of yellowish colour, with yellow edge and short, fleshy leaf-stalks. The crowns of affected plants are more numerous than are those of healthy plants. Many of the most popular varieties are susceptible to aphis attack; for example, Madame Kooi, Laxtonian and Royal Sovereign. Rather less susceptible are Stirling Castle, Sir Joseph Paxton and President. A distinct resistance to aphis attack is exhibited by Bedford Champion, MacMahon and Ruskin, and a high degree by Marshal Foch, Sturton Cross, Lord Overton and Aberdeen Standard, whilst the French variety, Tardive de Leopold, appears to be immune. It must, however, be recognised that susceptibility is, as might be expected, largely a question of strain, for, evidently, a vigorous plant will tend to "grow away" from the attack of aphis. To make sure that runners are free from aphis, the authors recommend the use of a solution of nicotine, water and soap, made of nicotine (ninety-eight per cent)., half-an-ounce; water, ten gallons; soap, sufficient to produce a lather. Runners dipped in the solution will remain free from aphis until the following spring. If aphis is prevalent in a plantation steps must be taken to control it, for aphis-infected plants never become normal. A thorough spraying with the nicotine solution would appear to be the best method of aphis control. With the facts recounted above in mind, Strawberry growers should be able to solve successfully the problem how to recover the high yields of former days. Attention to cultivation—early planting in well-drained soil—careful hoeing, keeping the hoe away from the crown, slight earthing up after July hoeing, elimination of poor strains, limited propagation, and the banishment or destruction of aphis, would appear to be the means, combined, we may add, with the use of a suitable fertiliser which will produce this much desired end. It is not often that we have the pleasure of reading such a business-like and valuable contribution to horticultural science as that made by Messrs. Bell, Mann and Staniland, whom we thank on behalf of those who grow plants and who will, we are sure, profit greatly by putting their precepts into practice.

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[*] *Journal* of the Ministry of Agriculture, Vol. xxiv, 6. September, 1927. Published by H.M. Stationery Office, 6d. net, post free.

Gift of Glory Woods to Dorking.—Lord Francis Pelham Clinton Hope intends to present the Glory Woods to Dorking next April, to celebrate the coming-of-age of his son. Glory Woods, which lie to the south of Dorking and are ten acres in extent, have for some time been very popular with visitors. Lord Francis, who is brother and heir of the Duke of Newcastle, is reported to have said that "As long as I can remember, Glory Woods have been the playground of Dorking, and I have no wish that they should be anything else."

Allotment Holders and Playing Fields.—Following the annual Conference of the Allotments Organisation Society and Small Holders (Limited), at which the subject of playing fields was discussed, the Secretary has forwarded the following resolution to the National Playing Fields Association :—"This Conference desires to record its high appreciation of the splendid efforts of the National Playing Fields Association in providing open spaces so that children and the youth of the nation may derive the fullest benefits from fresh air and recreation, and calls upon the allotment movement to back up the efforts of that Association as, in the opinion of this Conference, the work of the one complements that of the other."

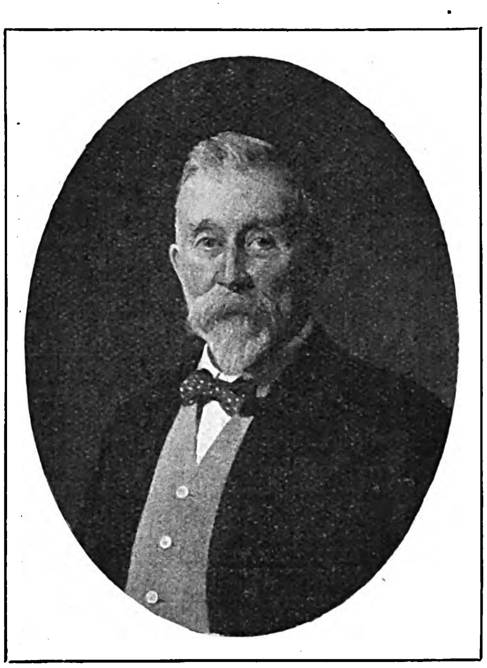
Gladioli at the Oyster Feast.—At this year's world-famed Colchester Oyster Feast (held on the 20th instant) there were several innovations, not the least interesting being the introduction of Gladioli for use in decorating the Mayor's Parlour and the Town Hall. The flowers were contributed by and accepted as a gift from the British Gladiolus Society, and included the leading British varieties.

Horticultural Club.—The Committee of the Horticultural Club has arranged a series of dinners and lectures for the session 1927-28. The first dinner will be held at the St. Ermin's Hotel, Westminster, on November 1, at 6.30 p.m. for 7 p.m., followed by a lecture by Mr. E. A. Bunyard on "Some Impressions of the Cape," illustrated by lantern slides. Notification of intention to be present should be sent to the Hon. Secretary, Mr. G. F. Tinley, 855, London Road, Westcliff-on-Sea, Essex.

Proposed Nature Reserve in Fenland.—The Council of the National Trust is appealing for a sum of £10,000 to enable it to purchase additions to and maintain Wicken Sedge Fen and Burwell Fen as a great natural reserve. The scheme has been under consideration for more than twenty-five years and is one that should appeal to all lovers of Nature. The property already acquired amounts to nearly one square mile, and the cutting of Sedge and litter brings in several hundred pounds a year, but the primary need now is for an endowment fund to enable the Trust to prevent undue overgrowth of certain native trees and shrubs, keep the water-ways clear, and preserve the rare plants and insects that abound in Fenland. The situation of these fens render them entirely suitable for a nature reserve. It is not so remote as to be inaccessible to nature lovers, yet sufficiently so to discourage undesirable visitors. It is largely protected by the broad waterways, the dikes and lodes of the Fenland, and is an ideal home for the fauna and flora of a wild, marsh country. In Wicken Fen (and St. Edmund's Fen), the Trust now owns 333 acres, but there remain 110 acres which it would be most desirable to acquire. In Burwell Fen the Trust owns 287 acres, but there are 230 additional acres of wild land, suitable and suitably situated, which the Council hopes to be able to obtain so as to ensure conditions which will perpetuate the ancient plant and animal life in Fenland on the lines that have been so admirably followed of late in Australia. A gift of £20 carries with it Life Membership of the Trust, while one of £100 entitles the donor to Honorary Membership. Donations in response to this appeal should be forwarded to the Secretary, The National Trust, 7, Buckingham Palace Gardens, S.W.1.

Royal Gardeners' Orphan Fund.—When the Lady Elinor Denison opened her gardens at Ossington Hall, Newark-on-Trent, Nottingham, to the public, rain fell so heavily that few people were able to take advantage of the privilege, consequently the collection made on behalf of the Royal Gardeners' Orphan Fund amounted to only 15s. This sum we have received from Mr. Albert O. Marshall, who, however, is shortly leaving Ossington Hall to take charge of the gardens at Bere Court, Pangbourne.

Mr. Alfred Watkins, V.M.H.—It is with great pleasure we reproduce the portrait of Mr. Alfred Watkins, V.M.H., founder of the wholesale seed firm of Messrs. Watkins and Simpson. He has always been a liberal supporter of the National Sweet Pea Society, and before that Society came into being he took part in the celebration of the Bicentenary of the Introduction of the Sweet Pea into England. Mr. Watkins conducted the National Sweet Pea Society's novelty trials at his firm's trial grounds at Twickenham, in 1926, and generously entertained the members when they visited the trials. In these and other ways he has "done good work on behalf of Sweet Peas," therefore the recent award of the Gold Henry Eckford Memorial Medal to Mr. Watkins was as well merited as it was popular.



MR. ALFRED WATKINS, V.M.H.

White Hill, Surrey.—The beautiful elevation in the parishes of Caterham and Bletchingley known as White Hill, was dedicated to the public on Saturday last. The land was purchased by Sir Benjamin Brodie and Mr. Harry Lloyd and presented by them as an open space for the use of the public for ever, and the title deeds have been handed to Mr. H. F. Mitchell, Chairman of the Caterham Urban Council. White Hill is about eight hundred feet above sea-level, and commands magnificent views over Surrey, Sussex and Kent.

Langdon Hills.—Efforts are being made to preserve Langdon Hills, a beautiful spot about midway between London and Southend. These Hills, already well-known to many Londoners, rise to a height of four hundred feet above sea-level and command fine views over the estuary of the Thames, Chelmsford, Brentwood and the Kentish Hills, and on fine, clear days, even St. Pauls and the Crystal Palace may be seen. About forty acres of the highest land is now offered for sale, and unless this area can be purchased for the public it is almost certain to be built over. The sum needed to preserve Langdon Hills is £4,000, and donations towards this amount should be sent to the Manager, Barclay's Bank, Laindon, Essex.

Horticultural Exhibitions in Germany.—An exhibition of flowers and fruits took place at Frankfurt during September, opened by the Oberbürgermeister, Dr. Landmann. The fruits shown, which came from all parts of Germany, demonstrated clearly that fruits of the best quality can be grown in the Reich; the sorting and packing also left little to be desired. There were likewise fine exhibits from Holland and from Italy, some Tyrolean Apples especially calling for high praise. In the flower section the firm of Pfitzer, Stuttgart, had a good group of Gladioli, and there were a number of Dahlia exhibits. From the 17th to the 19th September, an exhibition was held in Hanover, in which several complete gardens were shown, and aroused great interest among the visitors.

Mr. Kingdon Ward's Tenth Expedition in Asia.—On Monday, October 31, Mr. F. Kingdon Ward leaves London for his tenth plant-hunting expedition in Asia. He will commence with an Orchid collecting trip in the Naga Hills, and for this part of the expedition he will be joined at Marseilles by Mr. Sydham Cutting, of New York. At the conclusion of the Assam tour, Mr. Kingdon Ward will be joined by Mr. Hugh Clutterbuck, and will proceed to the Lohit Valley, where he proposes to explore to the north and west, in the Mishmi Hills, for new Rhododendrons and other trees and shrubs, hardy herbaceous and alpine plants. The entire expedition is expected to conclude in November, 1928, but if circumstances warrant, it may be extended beyond that period. Mr. Kingdon Ward will tell the story of his travels, as usual, in the pages of *The Gardeners' Chronicle.*

The late Dr. B. Daydon Jackson.—The funeral of the late Dr. B. Daydon Jackson, for forty-seven years Secretary of the Linnean Society, took place at Golders Green on Monday, October 17. In addition to members of the family, those present included Dr. A. B. Rendle (President), Lt.-Col. A. T. Gage (Secretary), Dr. W. T. Calman (Zoological Secretary), Mr. J. Ramsbottom (Botanical Secretary), Mr. S. Savage and Mr. W. S. Warton, from the Linnean Society; Dr. Otto Stapf, Editor of the *Botanical Magazine*; Sir David Prain, representing the Royal Society; Dr. A. W. Hill (Director), and Mr. A. D. Cotton (Keeper of the Herbarium) from Kew; Professor F. W. Oliver, representing the Botanical Department of the University College, London; Lt.-Col. Durham (Secretary) and Mr. F. J. Chittenden (Director of the Wisley Gardens), from the Royal Horticultural Society; Dr. G. M. Vevers, from the Zoological Society; Professor R. Gates, from the Botanical Department, Kings College; Mr. B. F. Barnes, from the Botanical Department of the Birkbeck Institute; Mr. de Post, representing the Swedish Ministry; Sir Arthur S. Woodward, Mr. Percy Thompson, Professor F. Fritch, and Mr. E. Moore, with representatives of other learned bodies and many life-long friends.

Presentation to Lord and Lady Aberdeen.—A special meeting of the members of the Deeside (Aberdeen) Field Club was held in the Town and County Hall, Municipal Buildings, Aberdeen, on Saturday, the 15th inst., to do honour to the Marquis and Marchioness of Aberdeen and Temair on the attainment of their fiftieth year of married life. There was a large and representative assemblage, and Mr. Charles Davidson presided. He opened the proceedings by paying a warm tribute to Lord and Lady Aberdeen for all they had done for the Deeside Field Club. Admiral Sir Arthur M. Farquhar said Lord and Lady Aberdeen had only to look round that great gathering to see how very much their services were appreciated by the Club. The Deeside Field Club was enormously indebted to them. He wished them everything that was good for the future, and congratulated them upon their golden wedding. Mrs. J. S. Davidson, Cairnlee, then handed a silver-gilt fruit dish to Lord Aberdeen as a token of regard and appreciation of the many valuable services he and Lady Aberdeen had rendered to the Club. The following inscription was on the fruit dish: "A golden wedding gift to the Marquis and Marchioness of Aberdeen and Temair from the Deeside Field Club. November 7, 1927." Lord Aberdeen, replying, said the gift was a beautiful token of a beautiful thought. It was a lasting token, to be for ever valued not only by Lady Aberdeen and himself, but by their descendants. They looked forward to the celebration of their golden wedding all the more because of the extraordinary manifestations it had evoked, and none more so than the comprehensiveness of the thought, kindness and affection of the Deeside Club. Lady Aberdeen, in her reply, reminded the hearers that the main link of union between them was a common love of Deeside. The very name had in it something intimate, caressing, fascinating, which lured them on to want to know as much as possible about the history and treasures of Deeside, and the reason of the peculiar and wonderful charm of that district of Scotia to which they were proud to belong. And now they were given that beautiful token, which in itself seemed to possess the associations which would bring back the memory of all those meetings when they had worked, played and travelled together. They accepted it as a token of the truest friendship and a pledge of still closer relationship in the future. Tea was served and a musical programme contributed during the afternoon, and amid manifestations of the warmest affection and regard for Lord and Lady Aberdeen one of the most delightful and harmonious meetings ever held under the auspices of the Club was brought to a close by a vote of thanks to the Chairman.

Appointments for the Ensuing Week.—Tuesday, November 1: Royal Horticultural Society's Committees meet; Brighton, Hove and Sussex Horticultural Society's show (three days); West of England Chrysanthemum Society's show (three days); Bolton Horticultural Society's lecture; Royal Caledonian Horticultural Society's meeting. Wednesday, November 2: Weymouth Chrysanthemum Society's show (two days); Croydon Chrysanthemum Society's show; Faversham and District Chrysanthemum Association's show (two days); Forest Hill Chrysanthemum Society's show; Guildford Chrysanthemum Society's show (two days); Taunton Chrysanthemum Society's show (two days); Bideford and District Horticultural Society's show; Nottingham and Notts. Chrysanthemum Society's meeting; London Gardens Guild lecture. Thursday, November 3: National Chrysanthemum Society's show (two days); Henfield Chrysanthemum Society's show; Winchester Horticultural Society's show (two days); Linnean Society's meeting. Friday, November 4: Chorley and District Chrysanthemum Society's show; Manchester and North of England Orchid Society's meeting; Dundee Horticultural Society's lecture. Saturday, November 5: Accrington and District Chrysanthemum Society's show; Blackburn and District Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Can Hollyhocks be Grown in Pots?*—At the present time, when I think it is becoming yearly more manifest that florists' flowers, to maintain their hold on public estimation, must be shown in the shape of plants as well as in a cut state, the question which heads this article naturally presents itself. Of course, the lag-behinds and stationary folks have already given their verdict: "Impossible," "Nonsense," and so forth; but men of progress may be inclined to try, and trying, are sure to succeed; for though red spider, thrips, mildew and other ills which plants are heir to, may present themselves, all that we can say is, we have beaten them before, and we will conquer again. Although the Hollyhock is a gross feeder, and requires considerable root-room, it is perhaps not more gross than some other plants which are grown for exhibition purposes, as for illustration, Clerodendrons; and if we observe the same rule with the Hollyhock, and give it rich compost and manure-water; in fact, if instead of allowing a cubic yard of soil we concentrate the nutriment of that mass in a ninth part of its compass, I have no doubt that the Hollyhock may be grown to great perfection; yes, to greater perfection than when unrestricted in the open ground, inasmuch as undue grossness may be controlled, and so equalised, that instead of having a few flowers at the apex, the plant may be proportioned to the flowers, and the flowers to the plant; that is, a well-grown and properly bloomed plant may be produced; of course, for exhibition purposes, a proportionate and regularly bloomed plant would be preferable to a large one with a few remarkably fine flowers, and yet the bloom-buds might be so thinned out and protected as to bring them to great perfection, both in size, colour and quantity. I have had some plants in the open ground scarcely more than four feet in height and beautifully branched, which I consider would be splendid pot subjects; and a dozen or score of them, nicely bloomed and contrasted, would form a group scarcely less remarkable and gorgeous than a bank of Azaleas in May. But it is not so much as objects of interest at exhibitions as for general gardening purposes that I would advocate the growth of Hollyhocks in pots; for, nicely managed, the purposes to which they might be applied in a decorative point of view are almost endless. Grouped together in well contrasted masses upon lawns, the pots plunged in the grass, or even as single specimens, mixed with gardenesque examples of shrubs or dwarf trees—arranged in lines along straight walks, or upon terraces, placed in niches; or indeed arranged anywhere where a very conspicuous object is required; they would be found exceedingly effective and alike useful for the decoration of the cottage ornée, or one of the palatial houses of England. We have no plant so effective as a single specimen, or which in its symmetrical proportions accords so well with straight lines and architectural proportions of a first-rate residence, as the plant under notice. Again, the season of the Hollyhock may be much extended; for, by bringing the first lot in pots forward in a warm situation, and retarding a late lot in a north aspect, we might have plants in perfection from June until October. In fact, in no point of view could the Hollyhock be out of place. *W. P. Ayres, Blackheath. Gard. Chron., October* 30, 1852.

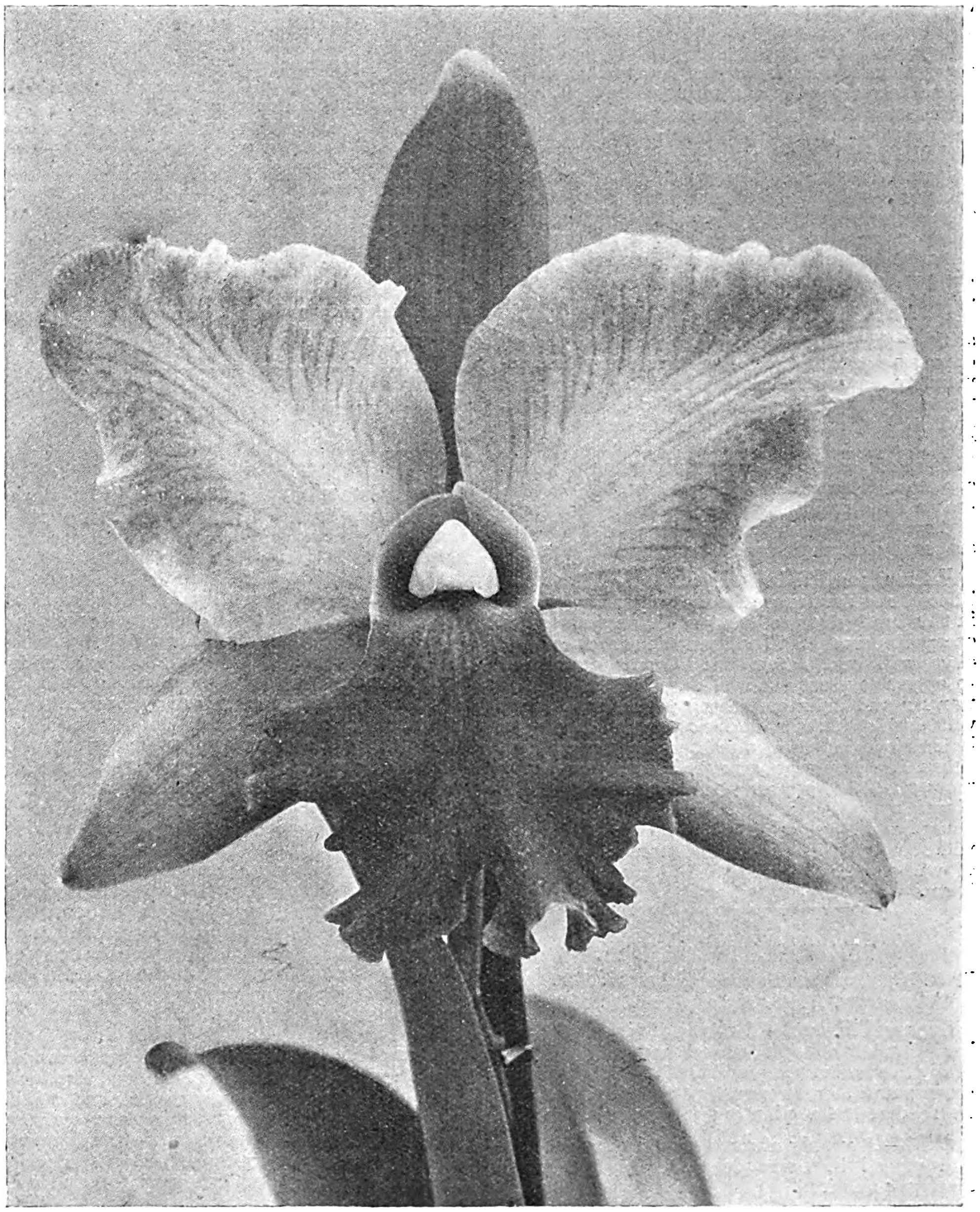


FIG. 152.—LAELIO-CATTLEYA MRS. MEDO, THE NODE VAR.

R.H.S. Award of Merit, October 18. Shown by Mrs. Carl Holmes (gr. Mr. Penton), The Node, Welwyn.
Flowers bronzy-yellow, ruby and purplish-mauve. (see p. 334).

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Vandas.—Plants of the tall-growing Vanda tricolor and V. suavis are developing new roots, and should either be repotted or afforded fresh surfacing material. Specimens with healthy roots but which have lost their bottom leaves, should have the lower part of the leafless stem cut away in order to bring the bottom leaves slightly above the rim of the pot. Fill two-thirds of the pot with crocks and finish off with new potting material in the usual manner. Well-rooted plants that have retained their foliage and are growing in pots too small to carry them through another season, should be placed in receptacles of a suitable size. Provide receptacles that will accommodate the roots comfortably. Place the lower roots in position and fill in with clean crocks, and over this place a layer of Sphagnum-moss; next, place the compost, which should consist of Osmunda fibre cut up moderately fine, and live Sphagnum-moss in equal parts, arranging it so that the material makes a slight mound from the rim of the pot to the stem of the plant. Aerial roots of sufficient length should be worked down into the material when potting, and the new ones, as they attain sufficient length, should be pegged down to the surface and receive every inducement to enter the material. After repotting, water will not be necessary for a few days, and afterwards only just sufficient to keep the Sphagnum alive. These Vandas delight in fresh air, and will grow well in a house having a warm intermediate temperature. A small, brown scale insect sometimes infests the leaves, and care is necessary in its removal, as the leaves are easily damaged and the plants disfigured.

V. Amesiana, V. Kimballiana and V. Watsonii.—These three Vandas are the most charming plants in this family and produce their flowers at a most acceptable season. The flower spikes are now well advanced, and before the blooms commence to open the plants should be placed in slightly warmer and drier conditions where the flowers will develop better and not be so likely to become spotted as in a cool, moist atmosphere. When the flowering season is over the fleshy roots need less water. During the winter the plants may be rested in a cool intermediate house, where very little water at the roots will be necessary, as the terete foliage is capable of withstanding considerable drought without harm.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Sage and Thyme.—Portions of either of these herbs, pulled off with a heel and dibbled very firmly in a bed of good sandy soil, will root readily during mild, open weather, and will then be in readiness for planting into beds later on.

Mint.—A supply of roots should now be lifted and placed in boxes in readiness for gentle forcing, as desired.

Spring Cabbage.—Round about this time plants required to constitute the main crop of this vegetable should be planted. It is not too late to make another planting in the course of the next few weeks for the latest supply.

Cardoons.—Where the stems of this vegetable are sufficiently blanched they should be carefully lifted and used as required. The tops may be protected during frosty weather by the method advised for Celery.

Lettuces.—Plants raised from seeds sown during early September, for the purpose of withstanding the winter, should be lightly thinned, as probably some may damp off during the season. The thinnings may be planted rather closely together in rows made about one foot apart. Winter lettuces should be grown either on a warm border or in a position sheltered from cold winds. Keep the young plants dusted with soot, which will preserve them from slugs. Should sparrows prove troublesome, stretch strands of black cotton or thread alongside the rows.

Spinach.—Where sowings of Spinach seeds were made, as advised, thin the seedlings to about six inches apart. The bed should afterwards be hoed on all favourable occasions.

Winter Spinach.—The Dutch hoe should be used between the rows of this crop so as to assist the development of the succulent leaves. Where pigeons or larks are troublesome, a dusting with old soot will generally ward off attacks.

Asparagus.—Asparagus stems should be cut down to within three inches of the base and the beds carefully weeded. A dressing of soot may then be given and lightly forked in, following this with a good dressing of well-rotted manure spread over the whole surface. Finally, place the garden line alongside the beds and lightly edge them with the spade, spreading the loose soil, shovelled from the alleys, over the manure, thus leaving the beds in a neat condition for the winter. The alleys between the beds ought to be lightly forked over, especially if the soil is heavy. Should there be any bare spaces in the beds, these sites should be marked with a stick and prepared for the reception of strong plants next April.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Fruit Gathering.—The gathering and storing of both Apples and Pears will need daily attention until the whole of the crops have been harvested. Late varieties should be gathered last as they keep much sounder when they are well matured, and sometimes a few clear bright sunny days late in the season greatly aid the ripening and flavour of the fruits of the best of our late keepers. Bramley's Seedling, Chelmsford Wonder, Lane's Prince Albert, Newton Wonder and Alfriston are very dependable for late use. Too much care cannot be taken in handling the fruits when placing them in baskets. I prefer to use trug baskets of medium size when gathering fruits. All fruits should be gathered when perfectly dry, graded and placed on clean boards or racks in a sweet, well-ventilated fruit room. Keep the different late-keeping varieties apart from the earlier sorts so that the latter may be used in order of ripening. Where there are large quantities of fruits they may be placed several layers thick, if perfectly sound. Keep the atmosphere of the fruit room sweet at all times and do not place the fruits on hay or anything that would impart a flavour to them.

Pears.—By this date most of the Pears will have been gathered, and they keep their flavour best when stored in a temperature a trifle higher than is generally allowed for Apples; even late varieties ripen much better and their flavour is much improved when stored in a moderately warm place. Our best late varieties, and those we depend upon most, are Josephine de Malines, Glou Morceau, Nouvelle Fulvie, Le Lectier, Beurré Perran and Blickling.

Plum Coe's Golden Drop.—This very excellent variety usually crops heavily, but unless the fruits are thinned freely their flavour is poor. Most, if not all, the fruits will have been gathered by now, but any still hanging on the trees should be removed carefully when perfectly dry, and placed in a dry cool place. If each fruit is laid out separately on tissue paper it will keep good for several days and improve in flavour.

Winter Moth.—In some seasons this pest is very destructive to the Apple crop, and in order to check their ravages grease-banding should be attended to without delay, otherwise it will be of little use this season.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Shrubs for Forcing.—Flowering shrubs are useful subjects for producing blooms during the early spring. They may be used either for cut flower purposes or for bold grouping in the conservatory, and for this latter purpose there is nothing so inexpensive. Lilac, Prunus, Viburnum, Wistaria, Spiraea, Laburnum and other kinds are all valuable and where a stock has been grown previously the pots should be examined with regard to drainage, the roots top-dressed with new soil and, if it is required to supplement their number, plants should be ordered forthwith.

Azaleas.—Azaleas are very useful plants, and few can surpass them for conservatory use during the winter and spring months. Large numbers of Azaleas are imported annually, both of indica and mollis varieties. Azaleas are very fine-rooting subjects, and when imported they should be placed in small pots. A suitable compost consists of peat and silver sand, which should be made firm by ramming; when potted they should be stood in a cool house or frame where frost is excluded, and sprayed occasionally. They must never suffer from lack of moisture at the roots, or the leaves will soon drop and the buds fail to open freely. After a few weeks of this treatment they may be taken into warmer quarters in sufficient numbers to meet the demand, and gradually forced.

Spiraeas.—These are valuable for producing flowers in early spring, and many herbaceous kinds are now available in quantity; these should be secured and potted up at once. Good sorts include S. Peach Blossom, S. japonica, S. palmata and S. Queen Alexandra. Spiraeas delight in a somewhat heavy compost, and the potting compost should be made firm about their roots. When growing freely Spiraeas need a considerable amount of water at the roots and must never be allowed to become dry; when the flower spikes are advancing it may be found necessary to water them twice daily on bright days.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Pot Strawberries.—The most important work amongst pot Strawberries will be storing the plants for the winter. Crowns have not ripened well and a number of growers will feel inclined to delay the operation of plunging if fine, autumn weather continues. The work must, however, be got through, and provided they are plunged in the open the plants will still have full exposure. If the natural soil is used as a plunging medium it should be limed or watered with lime-water and soot to destroy worms, which would otherwise do much mischief. Piling the pots on their sides is a method that cannot be recommended; pot Strawberries, like pot Peaches, should never lack water, hence the obvious danger of laying them on their sides.

Pot Vines.—These are not grown so much as they deserve to be, but the majority of growers who are obliged to cut Grapes early in May still grow a few annually, and this allows an extension of resting period for the permanent house. The successful forcing of pot vines depends more upon the preparation of the vines than upon the detailed operations of forcing; strong canes frequently fail while thoroughly ripened and weaker canes give plenty of bunches. Ripeness is the great desideratum, and canes should be chosen that are hard, brown and well-rooted, which have had a good rest and may be started with every chance of success. The house or pit should not be too large; a span-roof admits most light but requires more fire-heat than a lean-to. If the vines were shortened back to their proper length a few weeks ago there will be little danger of bleeding. When properly arranged, carefully rammed and lightly top dressed, a quantity of fermenting leaves, mixed with a little horse manure, may be introduced, but these fermenting materials must be renovated when necessary, as the warmth and moisture from these will permit of economy in fire-heat, and render direct syringing almost unnecessary; provided the buds break evenly and well the less the canes are syringed the better.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Oncocylus and Regelia Irises.—The hybrids generally known as Regelio-cyclus Irises are admittedly difficult to manage, but they are so beautiful that they are well worth some trouble. The species are represented by such choice and beautiful plants as Iris iberica, I. Gatesii, I. atrofusca, I. Susiana, I. Korolkowii and I. Lortetii. I. Susiana and I. iberica may be regarded as the most easily managed, and strong roots may generally be depended on to provide a good display, even in beds in the open. Generally, however, they should be planted on a warm, south border. A narrow border in front of a plant house is a very suitable position; shallow planting is essential, the rhizomes being covered with just sufficient soil to hold them in position. In the following season, when they have finished their growth, they may be either lifted and kept dry, or they may be covered with glass lights to keep them dry, but in any case a thorough ripening is necessary, and there is very little doubt that it is lack of sunshine to ripen the rhizomes that leads to so many failures with these Irises. If the species prove difficult and unsatisfactory there is some comfort in the fact that the hybrids are, perhaps, just as beautiful and certainly much more amenable to cultivation; all of them succeed on a warm, sunny border. A few good varieties are Charon, Eurydice, Flora, Hera, Hecate, Irene, Iris, Jocaste, Mars and Persophone.

Cimicifuga simplex.—In early October, this beautiful, hardy, herbaceous plant was making a fine display. Such a beautiful and graceful plant deserves to be more generally grown. It enjoys a cool, moist root-run and partial shade during the hottest part of the day. Planted alone in a bed or associated with late-flowering Kniphofias, it is excellent, while it is also well suited for planting on the margin of a lake or bog garden.

Deciduous Trees and Shrubs.—The transplanting of deciduous trees and shrubs may be commenced so soon as possible after they have shed their leaves, and it is an advantage to get transplanting done while the soil is in good working condition and still fairly warm. Most deciduous plants may be successfully moved without any soil attached to their roots, but care should be taken to preserve all the fibrous roots possible. When moved in this condition they should be very firmly planted. This may, in the case of smaller plants, be effected by treading, but in the case of large specimens it may be necessary to use a stout wooden rammer. It may also be necessary to water the plants, especially if the soil is at all dry. The first essential in successful transplanting is firm planting. Care must also be taken not to plant woody subjects too deeply, for many plants are killed slowly by deep planting. Deep planting is an unsuspected, but common, cause of Azaleas and Rhododendrons doing badly, and ultimately dying. Some plants, such as small trees, may require supports until they are established; this is best afforded by means of three guy ropes of soft gaskin—a much better method than that of using stakes and wires; although stakes may be sometimes necessary in exposed situations, they are not required after the first season. Large and valuable specimens are best prepared for transplanting by digging a trench round them the previous season and filling it in with good soil to encourage plenty of fibrous roots. To move large specimens with a ball of soil intact it is necessary to have a transplanting machine of some sort.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Preparation for Planting.—As the thorough preparation of the soil is one of the most important items, whether for Roses, fruit trees or bush fruits, this work should now be taken in hand and the necessary cultivation given, so that the soil may have time to settle down before the actual planting begins. Where the planting of new Rose beds or borders is contemplated the soil should be deeply trenched and heavily manured, keeping the fresh manure at least clear of the surface area to be occupied by the roots of the new plants. Many deciduous trees and shrubs may also be planted now, and where sites have been chosen, these may also be prepared in advance by breaking up the soil and subsoil as deeply as possible. Where a clay subsoil is encountered this should be removed, and its place taken by good soil; where practicable, some means of draining superfluous moisture from these holes should be devised, as otherwise they may hold water for a long time, and during wet weather the roots of the newly planted subjects remain in a constant state of stagnation. A quantity of chopped-up loam, leaf-soil and sand should be in readiness, and a little of this placed about the roots of the rarer and finer subjects to encourage the formation of those fibrous roots upon which so much of their future success depends.

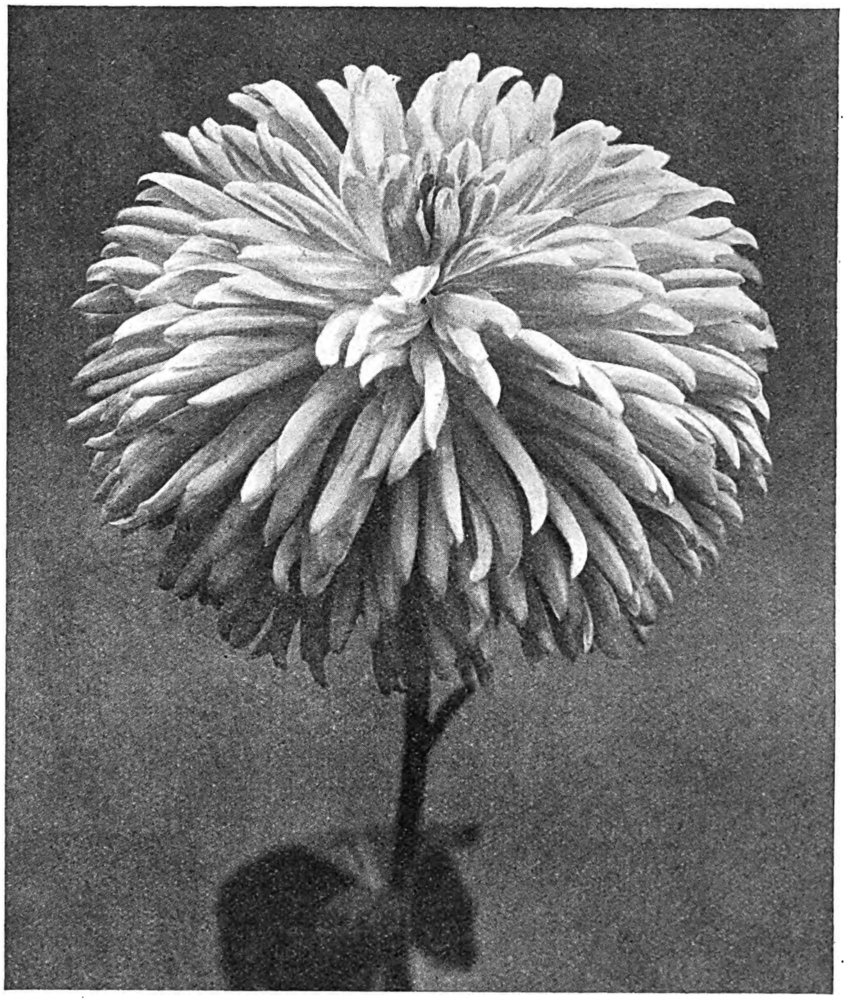


FIG. 153.—CHRYSANTHEMUM PINKEST.

N.C.S. First-Class Certificate, October 17; R.H.S. Award of Merit, October 18. Flowers mauve-pink. Shown by Mr. H. Shoesmith, jun. (see pp. 334, 336).

Spring Bedding.—So soon as the summer occupants are over they should be removed, and the soil prepared for the reception of the spring-flowering subjects. Bulbs should be planted without further delay, and all carpeting plants, Wallflowers, etc., should be put out while the ground is still comparatively warm. If once transplanted from their seed-bed as advised, the plants will now lift with fairly good balls of soil and roots and soon become established in their new quarters. This interesting phase of gardening has much to recommend it, as these plants, flowering in the early spring months, have a charm and freshness all their own, and many beautiful effects are obtained by judicious interplanting and blending of colours to suit individual tastes.

Under Glass.—Coleus thyrsoideus is now growing freely, and careful watering and feeding is required to keep the foliage in a healthy condition; this plant soon shows distress, the lower leaves turning yellow and dropping, leaving bare, unsightly stems. Plants in six-inch pots should be top-dressed, using any well-compounded fertiliser mixed with twice its bulk of soil. The plants should be kept from now onwards in a light position, and a night temperature of 60° will keep them growing steadily. Begonias of the Gloire de Lorraine type should now be allowed to flower, and if kept in a similar temperature to the above will soon develop plenty of blooms. These plants should also be regularly supplied with weak liquid manure and given an occasional watering with soot-water to keep the foliage in good condition. Salvia splendens is again putting forth its bright scarlet flowers, and as this is also a hungry plant its wants must be attended to. Isoloma hirsutum is also showing its deep crimson buds, which, later, will open, disclosing the bright-red tubular flowers. Cypripedium insigne has flowered earlier than usual this season, for some unknown reason, and it will be interesting to know whether this is the case with other growers; our batch of about sixty plants has been in full flower since early October.

ORCHID NOTES AND GLEANINGS.

CATTLEYA DOWIANA.

This superb Cattleya of the labiata group was discovered by Warscewicz in Costa Rica about 1850, but the plants sent by the collector to Messrs. Low and Co., of Clapton, arrived in bad condition and eventually died, so that it was not until the autumn of 1865 that C. Dowiana flowered for the first time in this country, in the Chelsea nursery of Messrs. J. Veitch and Sons, the re-discovery of the plant being credited to a Mr. Arce, a native naturalist, who was collecting in Costa Rica for Mr. G. Ure Skinner. The importation was sent to Mr. Skinner through Captain Dow, and to this last-named gentleman this superb Cattleya was dedicated.

Long ago it was recommended that C. Dowiana should be grown in baskets or pans and suspended from the roof at the warmer end of the Cattleya house, and this still remains a most satisfactory cultural method.

The variety aurea is more free-flowering than C. Dowiana; it was discovered by Gustav Wallis in 1868 in the State of Antioquia, while collecting in Columbia for M. Linden and, strange to say, in a locality quite six hundred miles distant from the home of C. Dowiana, in Costa Rica.

It is scarcely necessary to append descriptions of Orchids so well known; suffice it to say that the nankeen-yellow sepals and petals and the purplish-crimson, gold-reticulated lip of C. Dowiana combine to form such an exquisite piece of colouring as is scarcely equalled even amongst other Orchids; the variety aurea differs in the more copious and irregularly distributed golden markings of the labellum.

The influence of these superb autumn-blooming Cattleyas is evident in a host of beautiful hybrids. The well-known and beautiful C. Hardyana is a natural hybrid between C. Dowiana aurea and C. Warscewiczii (gigas), and is reported to have been imported with the latter. This fine plant first appeared in the collection of Mr. G. Hardy, of Timperly, after whom it was named.

One of the earliest artificially-raised hybrids was C. Chamberlainiana (C. guttata Leopoldii × C. Dowiana), raised by Seden for Messrs. J. Veitch and Sons, and dedicated to the late Rt. Hon. Joseph Chamberlain. *R. A.*

INDOOR PLANTS.

CYTISUS FRAGRANS.

Cytisus fragrans (syn. racemosus) is a useful greenhouse shrub of bushy habit, with dense racemes of yellow flowers, and one of the easiest shrubby plants to force into flower. When growing in small pots the plants require careful attention as to watering. Shapely specimens are obtained by moderate pruning directly after the flowering period. C. fragrans will grow freely in a cool greenhouse, and may be placed outside in a sheltered position during the summer. Plants in five-inch pots are generally the most serviceable. Loam and well-rotted manure with a small quantity of grit, make up a suitable compost for them. Cuttings are made from the young shoots taken with a heel and inserted in sandy soil and placed under a bell-glass, or handlight, shade being provided until they are rooted.

Cytisus fragans elegans has larger racemes than the type; good plants of this variety are obtained by grafting on the type.

Although not often seen growing out-of-doors, these Cytisuses are hardy in favoured localities, and I have recently seen two large bushes (in a town garden in east Kent) from five to six feet in height and loaded with bloom; their fragrance attracted my attention. These specimens had evidently been in their present position for some years. *C. Ruse.*

SOLANUM AVICULARE.

A large number of species of Solanum have been introduced to this country at one time or another, though only a few find favour at the present time, including S. Capsicastrum, S. jasminoides and S. crispum. I had one to name recently from Woburn, Bedfordshire, and this turned out to be S. aviculare, the Bird Solanum, or Kangaroo Apple. It is a native of Australia, Tasmania and New Zealand, and was originally introduced to this country in 1772. It is figured in the *Botanical Magazine*, t. 349, under the name of S. laciniatum. Most of the leaves are lanceolate and entire on old plants, but on younger and more vigorous specimens they are often pinnatifid, as in some other species, including S. Dulcamara. The flowers are violet, with a shortly and bluntly-lobed corolla, the segments being bifid and crenate. The filaments and style are pale blue, and the golden yellow anthers very prominent. The berries are about the size of those of S. Capsicastrum, but are oval and longer. At first they are green but become soft and pale yellow. It is considered a greenhouse plant, and makes a bush five to six feet high in time. It had been planted out at Woburn, where it was flowering and fruiting. Evidently this and S. nigrum are the only species native to New Zealand, though three others have become more or less naturalised. The early colonists made the fruits into jam. *J. F.*

ALPINE GARDEN.

ASTILBE SIMPLICIFOLIA.

A delightful little plant from Japan, Astilbe simplicifolia is so diminutive that those who are only acquainted with the taller Astilbes can hardly credit that it belongs to the same genus, say, as A. rivularis, A. Davidii and the now numerous hybrids of the race. Yet it is a true Astilbe and one of the few suited for the smallest of rock gardens or the mere rockery of the amateur with a small garden. Mr. Farrer called it "a gift of the gods," and truly it is a charming little plant, with beautiful, shield-shaped, crimped leaves, above which are reared the plumy spires of elegant white flowers, forming, altogether, an almost fairy-like plant. It is a most exquisite thing for a cool and moist place in the rock garden, where it is sheltered. It has one failing in some places—its life is too short, this being attributed to over-floriferousness by some, but, by others, to the inclemency of our climate. All I venture at present to state is that it seems to be even longer-lived in northern than in southern gardens. It may be increased by seeds or division, and likes a moderately light loam.

In combination with other species, A. simplicifolia has given rise to some hybrids with rose, red, or lilac flowers, but these are taller and more vigorous in every way. Excellent though these are, they fall short in refinement when compared with A. simplicifolia itself, though they are said to be less liable to early demise than the charming plant which is the subject of this note. I am growing A. simplicifolia at the base of rock-work, in a cool, moist, partially-shaded position.

WALDSTEINIA TRIFOLIATA.

Among the species of Waldsteinia I should be disposed to place the above-named first on the list. It has larger flowers than the others in cultivation, and, although of a rather trailing habit, has not the troublesome ways of W. fragarioides. It has much more effect than the others, and it constitutes a charming carpet for early bulbous flowers. I have had it in bloom with the Muscaris, or Grape Hyacinths, and with the lovely Narcissus pallidus praecox, and W. trifoliata formed a most delightful carpet for these, the combination of the bright yellow flowers of the Waldsteinia with the pale yellow of the Daffodil and the blue of the Grape Hyacinths giving great pleasure.

W. trifoliata has shining, trifoliate leaves and flowers, almost like those borne by the Indian Strawberry. It is remarkably easy to grow, and I have had it in both sun and shade, heavy and light soil, and in no case has it been shy to flower, and has covered the ground pleasingly.

It may be grown as a carpet plant or by itself in the rock garden or front of the border; while it is also excellent for the crevices of paths or steps. W. trifoliata comes into bloom in early spring, and lasts in flower for months. It is absolutely hardy and plants may be raised from seeds, while little pieces already rooted may be taken from established plants. Cuttings are easily rooted under a handlight or other glass shelter but should be kept close for a few days.

POLYGONUM VIVIPARUM.

Away up on the alpine lawns there may be seen in some districts the singular Knotweed called Polygonum viviparum. It is singular in the respect that, unlike most hardy flowers, it produces young plants in the axils of the leaves. There are, of course, others which do this, but not many, and the possession of this feature causes the plant to be of much more interest. But it is quite pretty in its way and is a nice feature on the front of the border or the rockery. It has neat leaves and stems carrying white flowers. These open in June. This Knotweed is seldom on the market, and it was with pleasure that I observed it offered this year. I have known it for upwards of forty years, and I was much interested in seeing it in a very old garden where P. viviparum had been grown in the borders for several generations. It is quite easy to cultivate in ordinary loam, and may be increased by removing the small, young plants, or pegging down the stems until the plantlets root. It likes the sun, but will grow in partial shade. *S. Arnott.*

GENTIANA FARRERI.

That this very beautiful Gentian is not so easily grown as its near ally, G. sino-ornata seems to become more apparent as time goes on. In a good many gardens visited this year, where the two species had been given an even start, G. sino-ornata is still strong and healthy, but the other is anything but satisfactory, if not altogether absent.

A series of wet summers may have been detrimental to the well-being of G. Farreri, for if one can come to any definite conclusions regarding its requirements it seems fairly obvious that it will not withstand such moist conditions as G. sino-ornata enjoys so heartily. Even so, a number of plants put out last spring in a fairly cool but well-drained bed of gritty soil, with plenty of old leaf-mould, have, for the most part, turned pale and sickly. Yet in precisely similar conditions, indeed, in the same bed, G. sino-ornata and G. verna are doing splendidly. If one may judge by the respective prices of these two Gentians in catalogues, the nurserymen are also finding G. sino-ornata easier to manage than G. Farreri. *A. T. J.*

BULB GARDEN.

CROCUS ZONATUS.

The true autumn Crocuses receive too little attention in our gardens, and, with the exception of a few, such as C. speciosus and C. longiflorus, and one or two others, are rarely seen in the average collection of hardy plants. Perhaps this is due to the fact that there is generally no lack of flowers at their flowering time, and that they are therefore less appreciated than their sisters of spring, which come to cheer us after the long, gloomy time of winter. To my mind Crocus zonatus is one of the most delightful of these Crocuses of autumn. No doubt the brave C. speciosus, the "Blue Crocus," is more brilliant in its colouring, and C. iridiflorus more distinct and yet very lovely, but C. zonatus has a delicate charm which appeals to some of us even more highly than these others do.

I have been enjoying the beauties of a fine clump in a sunny position in my garden, and to me it seems more delightful than ever, with its delicate colouring and shapely blooms. The colouring is described by one reliable writer as "rose-lilac, veined with purple," but bare words do not adequately convey any true impression of the delicacy of colouring possessed by this Crocus, although one dare not venture to offer an alternative description. The bearded throat is yellow, and gives the impression of a distinct zone at the base of the interior of the flower, while the tube is pale buff. The whole aspect of the flower is one of exquisite delicacy and harmony of colour, and a clump or mass in full bloom is a true delight to the flower lover. A native of south Europe and Asia Minor, C. zonatus is perfectly hardy, and increases fairly freely in moderately light loam. Like other Crocuses of autumn, it should have a sunny position and, if possible, one sheltered from stormy winds. It is galling, indeed, to have a mass of this or, for that matter, any other Crocus, prostrated by a storm, such as we have had too many of this autumn, and sheltered places where there is no rebound of the wind are most desirable. *S. A.*

HARDY FLOWER BORDER.

HERBACEOUS CLEMATIS.

The herbaceous section of Clematis is much neglected, notwithstanding that it contains kinds eminently suitable for the herbaceous border, but which are seldom seen, even in large gardens where other hardy plants are grown extensively.

Clematis recta is probably more often seen than others; this is a desirable species, having erect, wiry growth that requires only a few Hazel twigs for support. Growing from three-and-a-half to four feet high, it bears numerous panicles of sweetly-scented flowers from June to August. Any good garden soil will suit this plant, but where the soil is deficient in lime it is advisable to give a light dressing of lime during autumn.

C. heracleaefolia var. Davidiana (Fig. 154) is a choice variety which all lovers of hardy plants should obtain. It grows about four feet high, having much larger foliage than the former; the leaflets on well-grown plants measure from six inches to nine inches long and as much in width. The flowers are delighfully fragrant, of a bright-lavender-blue, and generally borne in closely-packed clusters in the axils of the leaves. Individual flowers resemble those of a Hyacinth, the points of the petals being reflexed. This Clematis flowers during September.

Cote d'Azur flowers at the same time as the last-named and is a rather stronger grower. The flowers are also produced from the axils of the leaves, those on the lower part of the plant being borne in short spikes about six inches long, but, higher up, the spikes become shorter until the top whorl is a closely-packed cluster. A stem in front of me as I write is two-and-a-half feet long and covered with beautiful, reflexed flowers, each one measuring three-quarters of an inch long. The colour is much darker than in the previous variety and to many, more pleasing; unfortunately, the flowers lack the delightful fragrance of C. h. var. Davidiana; none the less, it is one of the most desirable plants for the herbaceous border during late September and early October. *R. F.*

HELENIUM PUMILUM MAGNIFICUM AURANTIACUM.

This form of the valuable and popular Helenium pumilum magnificum was sent into commerce three or four years ago, and after three years' trial I have come to regard it as a decided acquisition. In a border, quite near the fine H. p. magnificum, the variety aurantiacum is decidedly more impressive than the other, and its richer colouring is much admired. *S.*

KNIPHOFIA NELSONI.

Among the many dwarf Kniphofias which one now finds so useful in the rock garden and mixed border none is more beautiful than K. Nelsoni, and this species is distinct enough to more than hold its own anywhere. It is especially valuable as a late bloomer, for it comes to cheer the garden with its fiery torches during the later autumn when most of its kind are going over and flowers in general are few. K. Nelsoni may be recognised by its very slender, dark green, grass-like leaves, which make a bold tuft some twelve inches or more in height. The thin and elegant flower spikes attain about twice the stature of the foliage, and though the individual blossoms are comparatively few, each standing out distinctly instead of forming a close head of bloom, they are an exceedingly brilliant flame-scarlet colour.

This excellent plant is perfectly hardy in a well-drained soil. A good deep loam freely mixed with grit and rubble and enriched with a little old cow manure suits it admirably. A sunny position is desirable and planting should, for preference, be carried out in spring. *A. T. J.*

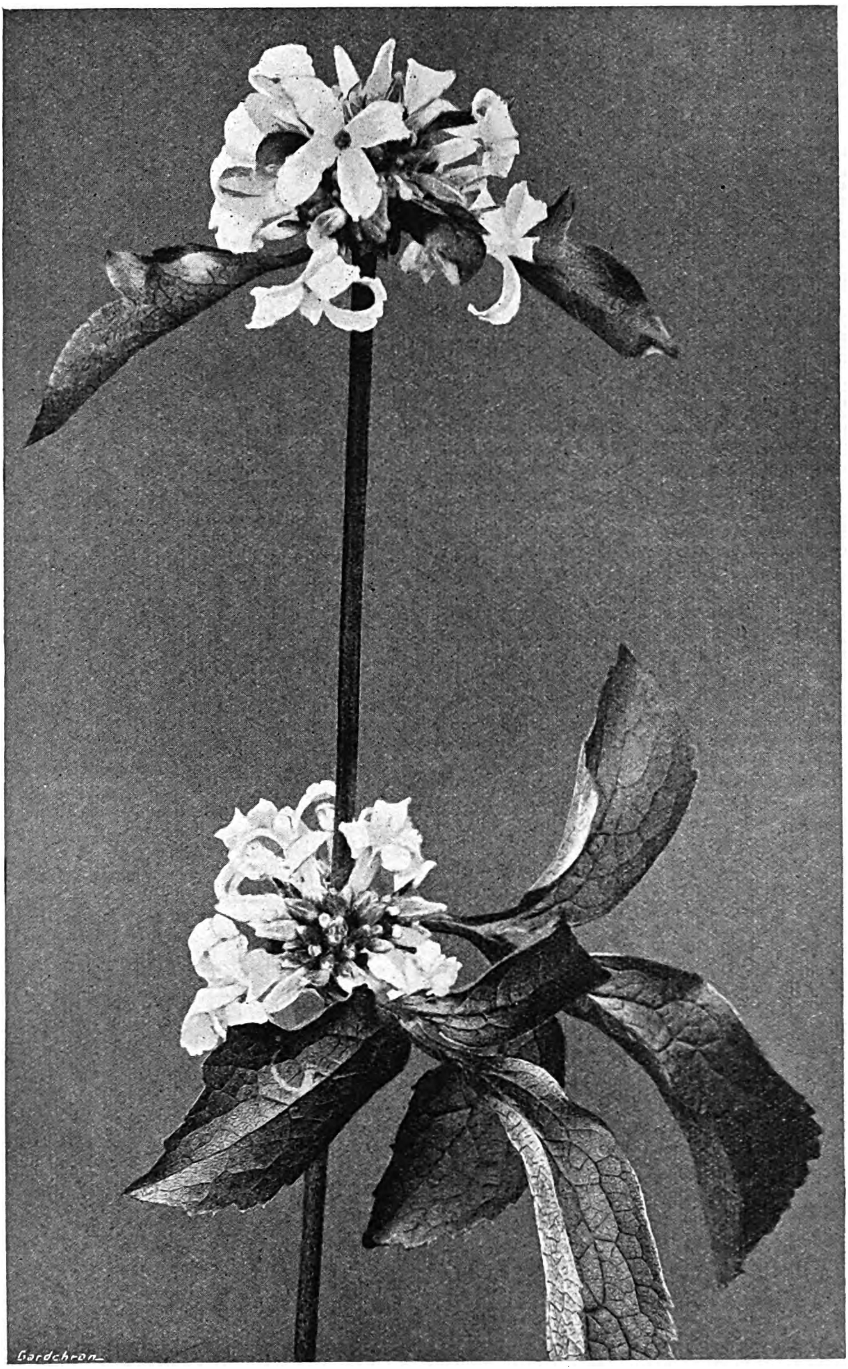


FIG. 154.—CLEMATIS HERACLEAEFOLIA VAR. DAVIDIANA.

PANICUM BULBOSUM.

There are something like 280 species of Panicum, though some authors have run them up to something like three times that number by segregation, and the genus has also been divided into many genera by a similar process. One might imagine that several species would have been found of ornamental value in gardens for the sake of their panicled inflorescences, but, doubtless, many of them are too tender to succeed in this country. A number have migrated to this country and are recorded as aliens that have become more or less naturalised, but they are of no ornamental value. At the Holland Park show a grass was used for decorative purposes, and several people wanted to know the name of it. This was Panicum bulbosum, a native of Mexico, which appears to be hardy, at least in the south of England. The stems grow two-and-a-half feet high and are furnished with long, arching, rather broad leaves. Every spikelet consists of two empty glumes and two containing a flower. These glumes are blackish-purple, and what is most important of all, the spikelets are of small size and each is carried on its own slender stalk. Herein lies the ornamental value of the plant, because the stalks of the panicle and all its ramifications are slender and graceful, making the inflorescence a foil to heavy and large flowers of various kinds. *J. F.*

HARDY PRIMULAS.

THE hardy Primulas make up a group of exceedingly useful plants adapted for various decorative purposes and representing great diversity of habit and growth. Although many of them delight in a cool, moist, rooting medium and shaded conditions, others thrive in open, sunny positions or make excellent subjects for the rock garden. Like many other plants they have come very much before the public eye in recent years owing to the vast number of newly-introduced species, largely from China. So great has been this influx that whereas two or three decades ago it was not difficult for a person to be acquainted with practically all the species then existing, to-day it is only the specialist who can claim to have a general knowledge of the genus. Despite this enormous addition, however, many of the older species retain their popularity as subjects for our rock gardens and woodlands.

P. japonica, one of the most vigorous growing of the Primulas, is amongst the most beautiful of hardy perennials in cultivation. It produces luxuriant foliage and stout, handsome scapes, frequently exceeding two feet in height, which bear five or six many-flowered whorls of variously coloured flowers ranging from rich blood-red to rosy-pink and white. It thrives best in a deep, rich loam, prefers a position where it does not receive continuous sunshine, and is an ideal plant for growing near the water-side. The seeds sometimes take a considerable time to germinate but generally do so quickly if sown so soon as ripe.

P. denticulata and its variety cashmeriana represent a section of very showy Primulas valuable for the fine effects they produce early in the year. From large rosettes of Primrose-like leaves stout stems arise in early spring carrying round heads of lilac flowers in varying shades; these remain in beauty for a considerable time. These Primulas thrive in a rich, cool soil, and are charming plants for moist situations in the rock garden. They will endure any amount of sunshine and should be planted in positions free from the influence of overhanging trees. Owing to their early season of flowering, however, they should not be exposed to an eastern aspect, as in such positions the flowers are liable to damage by early spring frosts, whereas in positions where they are protected from the sun's early rays, and thaw is gradual, little damage results.

P. capitata is a very fine species of similar habit which should, however, be planted in a pocket in the rock graden, where it is shielded from the midday sun. The spikes are from six to nine inches high and appear from April to June and bear dense, globose heads of violet-blue flowers enveloped in a white mealy powder.

No question can arise as to the great value of P. rosea, a handsome species with a neat habit, equally at home on the well-drained border and in the rockery. It forms dense clusters of bright, glossy-green leaves, from which are thrown up large trusses of medium-sized flowers of the most brilliant rose colour. Few plants can be raised with greater facility, and if individual specimens are comparatively short-lived, there is no difficulty in replacing them.

P. pulverulenta is a very strong grower, often throwing up spikes to a height of four feet and bearing numerous whorls of brilliant, maroon-crimson flowers in May and June. It is free-flowering and somewhat resembles P. japonica in habit, but the flowers and stems are thickly covered with a white, mealy powder. It is a handsome plant for moist and partially-shaded positions.

P. Mooreana is of similar habit to P. capitata but is valuable owing to its late-flowering character. Its handsome heads of violet-purple flowers are a feature in the rock garden, in August, where it delights in a rich, well-drained soil and prefers a shady spot.

P. helodoxa is a noble plant producing stout spikes often exceeding three feet in height, bearing whorls of bright yellow flowers in June and July. It is an invaluable plant for moist, semi-shaded positions, but it likes a light, rich soil.

P. farinosa, a native plant, though not widely distributed, is a little gem for the rock garden. Its pale lilac flowers, with yellow eye, are arranged in compact umbels on stems thrown well above the leaves. The leaves are small, glabrous on the upper surface and usually covered with a white meal on the under surface. It likes a fairly stiff soil and a moist situation.

P. sikkimensis is an interesting plant of elegant habit bearing large, pale-yellow, drooping flowers in loosely disposed umbels. The individual flowers are of remarkable beauty and suspended gracefully on slender pedicels.

P. Cockburniana, a choice little plant, bears graceful umbels of brilliant, orange-scarlet flowers. It is very easily grown and is a beautiful and distinct species.

P. integrifolia, an elegant little species, has oblong, smooth, shining leaves, and produces tiny scapes only two or three inches high, which bear one to three rose-coloured flowers in early summer.

P. Bulleyana is a magnificent plant, producing stout spikes of orange-coloured flowers of striking beauty in June and July. It is of vigorous growth but needs a cool, moist, rooting-medium.

P. Beesiana, a distinct Chinese species of vigorous habit, produces stout stems, often reaching two or three feet in height and bearing several whorls of rich, velvety-purple flowers with a conspicuous yellow eye.

A most distinct and striking plant is P. Littoniana. The long, slender spikes thrown above its oval foliage are of a reddish colour before the flowers open, and in a group give a rich effect; later, as the flowers expand, the mauve colour contrasts strongly with the red tips. It does not like much sun and should be given a cool, shady position.

P. Veitchii is a Chinese species of compact habit, suitable for a moist, cool position in the rock garden. It has attractive foliage and bears bright purple flowers with a rosy tinge. P. Poissonii is also a beautiful Chinese species, producing stout stems bearing large, brilliant, rosy-purple flowers, but it is not hardy everywhere.

P. Winterii is a charming Himalayan species, worth taking a great deal of pains with as it flowers in February and March. A position should be given it in a sheltered nook of the rock garden where it is protected by overhanging rocks, but it must not be allowed to suffer from dryness at the roots. The flowers are about the size of those of the common Primrose, but of a beautiful delicate, lavender-blue shade with a distinct zone of white round the conspicuous yellow eye. The whole plant is freely powdered with white farina, which enhances its beauty. *A. P. C.*

FLOWER GARDEN.

CORTADERIA ARGENTEUM.

THIS plant is still listed in many catalogues as Gynerium argenteum. It is one of the most imposing of all the Grasses, and should be grown in all gardens where sufficient space is available.

There are many positions where its stately appearance will be advantageous, either in association with rocks or water, among dark-foliaged Conifers, as a background for mixed borders, or even for the sides of drives and walks.

It thrives best in a deep, rich, alluvial soil which is well supplied with moisture, and requires a fair amount of space above ground to unfold its long, linear leaves, which are produced in dense tufts, four feet to six feet high, and as much through. These leaves have very rough edges, and should be handled with care.

This grass may be raised easily from seeds, and with liberal treatment the seedlings will flower in four years from sowing. This period may be reduced by sowing the seeds in gentle warmth in February and planting the seedlings in prepared beds in May.

There appear to be many different strains of this plant; it is therefore sometimes desirable to propagate by division those plants which produce the finest flower stems, although these divided plants are usually more delicate than seedlings, and require more protection until thoroughly established.

The old leaves should not be removed until the beginning of May as they afford a natural and usually sufficient protection for the crown of the plant.

The flowers are disposed in very large, terminal panicles on stems often ten feet high. These may be cut and dried before they fade, when they will prove most useful for the decoration of halls and staircases throughout the winter. *R. K.*

DAHLIA PRESTIGE.

"IF I had to name the most perfect Dahlia, I would say, 'Prestige'"; this remark was made to me by Mr. W. Hart, who deals with all Dahlia matters for Messrs. Dobbie and Co.—no mean testimonial to this variety. Many will be inclined to agree with Mr. Hart. Prestige is ideal in habit and form, and rich in its colour tone, and is described by Mr. Stredwick, the raiser, as deep orange, of the decorative type; he also informs me that it is a seedling from the giant-flowered Berengaria.

Prestige is a first-rate variety for a large bed, being only about three feet in height, and it flowers with the greatest freedom. It appears that this variety may well be the forerunner of a new type, as it has entire leaves, at least one can very rarely find a divided leaf; this adds to its distinctiveness. Those on the look-out for first-rate Dahlias should not miss this very special plant, which must, I believe, have a great future.

As a companion plant, but light yellow in colour, there is still nothing to surpass Brentwood Yellow; though now nearly twenty years old, this fine variety is still unbeatable as a yellow bedding variety. Mr. J. T. West, its raiser, informs me that it is still in demand, and he considers it one of his very best introductions. *T. Hay.*

TREES AND SHRUBS.

BUDDLEIA ALTERNIFOLIA.

I READ with very great interest "J's" remarks (p. 324) on this beautiful shrub. Undoubtedly he has been most unfortunate in his dealings with it. Buddleia alternifolia is one of the most beautiful flowering shrubs introduced during recent years, but I think its success depends largely upon the soil and position in which it is planted. It has a tendency towards vigorous growth, a tendency exhibited right from the seedling stage, for plants from seeds will make bushy plants often two feet high in one year, while plants from cuttings inserted last autumn in sandy soil over a bed of rather rich rooting material have, in most instances, made growths over three feet long. These remarks emphasize the fact that it should not be planted in rich soil; if it is, it will undoubtedly produce rank growths which will not ripen and therefore not flower the following season. This Buddleia does very well at Wisley, where several of the plants raised from seeds collected by the late Mr. Reginald Farrer are from eight to ten feet in height, very graceful in appearance, and annually clothed with a profusion of blooms. All these plants, together with several younger plantations, are in light, loamy soil, and in several instances very strong soil, and open, sunny positions. One group, consisting of a dozen or more plants, was planted last spring as one-year-old plants from seeds; they are now three to four feet in height and give every indication of a fine display of blooms next summer, for they are a mass of ripened growths, despite the fact that the season has favoured coarse, rank growth.

Buddleia alternifolia has exactly the type of root to encourage coarseness of growth, making, as it does, either a single or several straight, thick, tap-roots, which are almost devoid of fibres. I know a plant similar to that described by your correspondent; it is planted in deep, rich soil and has made four stout growths about eight feet in length, the laterals of which have not ripened at all, so that the prospects of a flower display next summer are nil. Apparently, Buddleia alternifolia is to be found in poor soil and warm, sunny positions, for the late Mr. Reginald Farrer described it in his field notes (R.H.S. *Journal*, Vol. 42, p. 63), as growing on steep, dry banks and open, warm places—as bushes or small-trunked trees. I have raised several thousands of this shrub, both from seeds and cuttings, and can vouch for its vigour, which can only be held in check, and turned to advantage in the production of blossom, by a careful choice of position and soil. As for being the ideal shrub for small gardens, that is a matter of opinion; personally, I can hardly imagine any garden too small to contain such a gem. *A. G. F.*

LOMATIA FERRUGINEA.

A long time ago I received information concerning some very fine plants of this beautiful shrub growing at Castle Levan Gardens, Gourock, and recently, by the courtesy of Mr. Traill, I have had photographs taken. These two plants are both about twenty-five feet high, well-grown, bushy specimens, and carry an abundance of the finely-cut Grevillea-like foliage characteristic of this native of Chile. The upright iron fence in the foreground (Fig. 155) is four-and-a-half feet high, and, by comparison, gives a fair idea of the dimensions of these specimens. Mr. Traill informs me that the whole of the Lomatias growing at Castle Levan (there are quite a number of them) were raised from cuttings about thirty-one years ago, and it is evidence of the skill of the propagator, as well as of the favourable climatic conditions on the shores of the Clyde, to find them still thriving and healthy, as Lomatia ferruginea is by no means the easiest of plants to propagate in that manner.

To see these Lomatias in flower, a visit was paid in July, two or three years ago, when I was agreeably surprised to find that they flowered most profusely, although many of the clusters of scarlet and gold flowers were partially hidden among the luxuriant foliage. Another point of more than ordinary interest is the fact that these specimens produce good crops of fertile seeds annually and thus provide a much surer means of raising a stock of young plants than the uncertain one of raising them from cuttings. Mr. W. J. Bean, in his *Trees and Shrubs Hardy in the British Isles*, refers very shortly to a plant of L. ferruginea growing at Castlewellan, Co. Down, which was ten to twelve feet high, but his description of the flowers leads one to believe that it must be a different variety, as the colours mentioned viz., rosy-red and white, in no way correspond with those of the flowers produced by the trees under consideration. *A. T. Harrison.*

BERBERIS VERRUCULOSA.

Visitors from the continent have been known to remark on the fine specimens of Berberis verruculosa which are to be seen in this country. The writer knows one garden in Sussex where there is a bush of B. verruculosa fully five feet high, nearly as much through, and clothed to the ground with foliage. This is probably an exceptionally good specimen. In several European countries B. verruculosa is not considered to be very hardy, notably in Germany and Austria. It would appear that the foliage and younger growths of this Barberry are subject to injury when the early morning sun follows sharp frost, a form of frost-damage which is well-known to growers of Asiatic shrubs. The statement that this species is hardier with us than with our continental contemporaries may possibly be explained by the fact that the frosts experienced in mid-Europe are frequently more severe, and the sunshine infinitely more intense than we are accustomed to in our muggy climate. In passing, it may be noted that Berberis verruculosa has proved hardy at the Arnold Arboretum.

B. verruculosa was found by Mr. E. H. Wilson in 1903 in the mountains of Western Szechuan. Wilson was at that time engaged on his second Chinese expedition for Messrs. J. Veitch and Sons, of Chelsea, who received the seeds in the following year, and flowered the plant at Coombe Wood in 1908. B. verruculosa is a compact, rounded bush, having stiffly-arching branches, thickly set with Holly-like leaves, one inch to one-and-a-half inch long, dark glossy-green above, glaucous beneath, and with recurved margins. The young stems are curiously rough or verruculose, and the branches bear thorns about one-and-a-half inch long. Of slow growth, the normal height under congenial conditions varies from one-and-a-half foot to three feet.

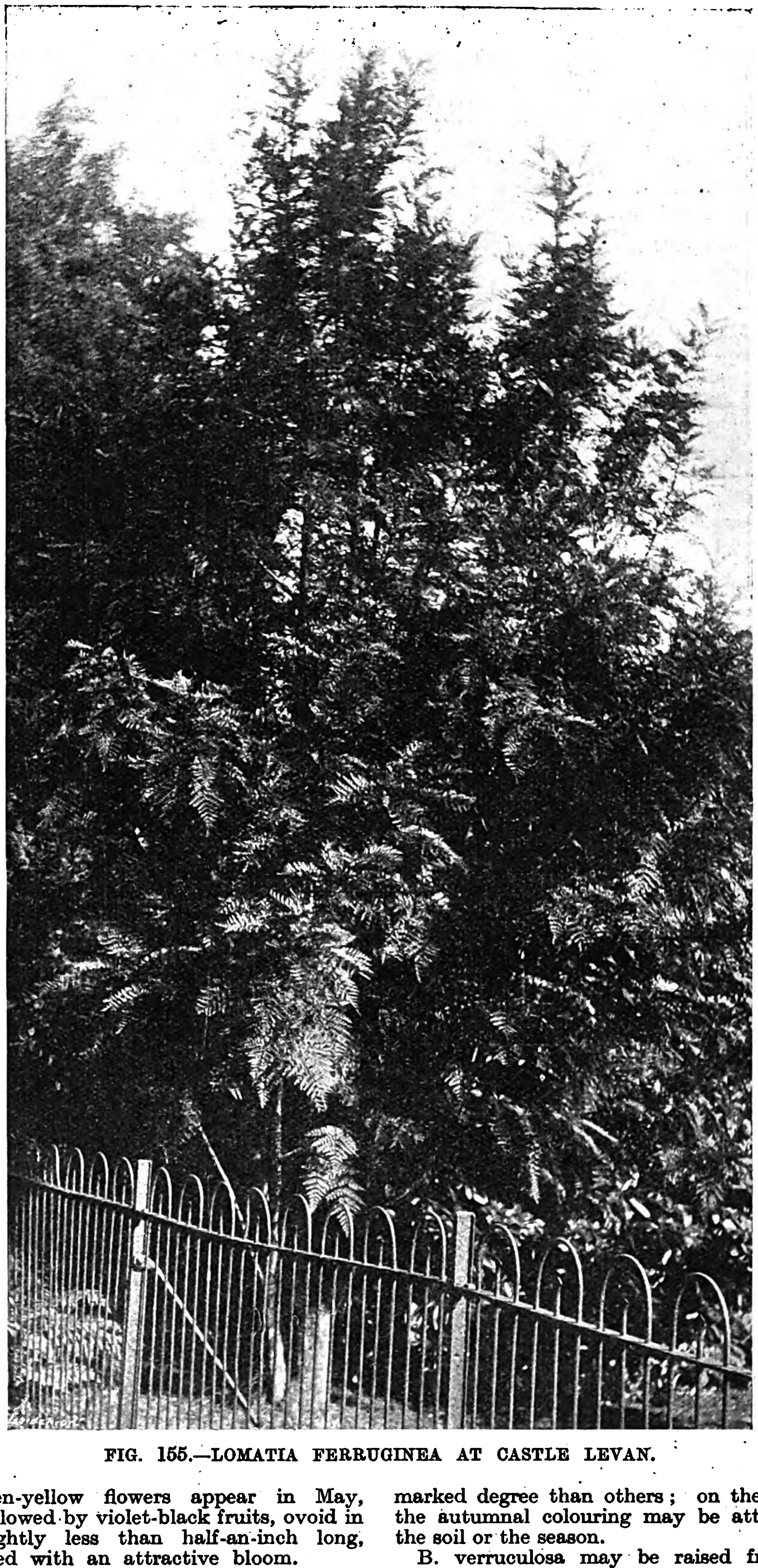


FIG. 155.—LOMATIA FERRUGINEA AT CASTLE LEVAN.

The golden-yellow flowers appear in May, and are followed by violet-black fruits, ovoid in shape, slightly less than half-an-inch long, and covered with an attractive bloom.

The chief characteristic of B. verruculosa is its neat habit and dense growth. It is, therefore, an excellent evergreen for the rock garden, and although it cannot be relied upon for a first-class annual display of flowers and fruits, there are seasons when it will surpass itself with a profusion of yellow blossom, and later, if the birds permit, of the large, handsome fruits. This plant has a further attraction; though otherwise evergreen, it loses a little foliage every autumn, and before these leaves fall they assume striking crimson and scarlet colourings. Sometimes the whole bush will colour, but usually the brilliance is confined either to the lower part of the plant or to an occasional branch. It may be that certain forms raised from seeds exhibit this character in a more marked degree than others; on the contrary, the autumnal colouring may be attributed to the soil or the season.

B. verruculosa may be raised from seeds, but as it is a rather shy-seeder with us it is usually propagated by cuttings of ripened wood, taken with a heel, and inserted in a sandy compost. Though many species of Berberis will root during the winter, if the cutting-pots are plunged at the base of a north wall in October or November, those of an evergreen nature seem to require slightly more protection. *L. B. C.*

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IDEAL GARDENS AND PLANT LORE.

In Homer's Wide Domains.

(*Concluded from page* 288).

REFRESHED by our hours with the Immortals, we now resume our study, and enquire into the name and nature of the Lotos, or Lotus. It frequently happens that confusion is introduced into the study of plants either through one name being differently spelt, or through the same name being applied to different things. Thus the Sycamore and the Sycomore are constantly being mistaken the one for the other. Even Skeat, who is usually so reliable, does not get us out of the wood. In his *Concise Dictionary* these definitions occur :—

Sycamine, a tree (L.-Gk.-Heb. ?) L. *Sycaminus.*—Gk. *συκαμινος*; Luke xvii, 6. Prob. a Gk. adaptation of Hebrew *shigmim*, pl. of *shigmáh*, a *Sycamore*; that it has been confused with *Sycamore* is obvious.

Sycamore, a tree (L.-Gk.). Better *Sycomore.* —L. *Sycomorus.*—Gk. *συκομορος*, lit. 'Fig-Mulberry.'—Gk. *συκον*, Fig; *μόρον*, a Mulberry.

Now while Sycomore is correct for the 'Fig-Mulberry,' Sycamore is the recognised name for the larger Maple (Acer pseudo-platanus, L.). This matter was long ago set in its right light by Mr. Leo H. Grindon in his *Scripture Botany* (page 206).

A similar case is that which now confronts us. Did Homer know the Lotus or the Lotos, and which of the different plants so named are we to hold in mind when we read, for example in the *Odyssey* (ix, 93) as follows, in Pope's translation :—

> They eat, they drink, and nature gives the feast:
> The trees around them all their food produce;
> Lotus the name: divine nectareous juice!
> Thence called Lotophagi.

Perhaps I cannot do better than quote from the note which is appended to this passage :—

"A great difference of opinion has prevailed among the moderns as to what the ancients intended by the Lotus. Of the existence of a fruit growing spontaneously, furnishing the popular food of nations, there is no doubt. Polybius appears to have seen it in the country of the Lotophagi. There appear to have been two distinct species of Lotus, because Herodotus and Pliny describe a marked difference, the one being an aquatic plant, whose roots and seeds were eaten in Egypt, the other the fruit of a shrub on the sandy coast of Libya. Herodotus, in writing of the Lybian Lotus (Bk. iv, 177), states that the fruit is of the size of the Mastu (a misprint for Mastic or Mastich, Latin *Lentiscus*, Greek *σχινος*), sweet like the Date, and a kind of wine is made of it. Pliny describes two different kinds, the one found near the Syrtes, the other in Egypt." See also the article on Lotus in Professor de Gubernatis' *Mythologie des Plantes.*

The Lotophagi, or Lotus-eaters, derive their name from the Lotus, Zizyphus, or Jujube (Rhamnus Lotus, Linn.), the fruit of which is by some writers said to be like gingerbread, being, when fresh, of a bright yellow colour. To make confusion worse confounded, however, we have the term Lotus applied to a genus belonging to the Leguminosae and some affirm that this is one of Homer's plants. Purvès thus translates one of the passages in which the word occurs (*Iliad*, xiv, 348 cont.) :—

"So spake the son of Cronus, and caught his consort in his arms; and beneath them the divine earth sent up new, sprouting grass, and dewy Clover, and Crocus, and Hyacinth." This Lotus, Clover or Trefoil, found in the moist lowlands of Greece and Troy was used as the food of horses and cattle. Thus we read (*Iliad.* ii, 776) how "the horses stood each in their chariot place and ate of Clover and Parsley from the marsh." Buckley, unlike Purves, prefers to let the original word remain, and reads :—"Their steeds stood, each near his chariot feeding on Lotus and lake-fed Parsley."

Now while it is clear that Homer does not allude to the Water-Lily or Lotus which fills so great a place in the plant-lore of the East, from Egypt to Japan, it seems equally certain that at least two kinds of plant are mentioned in the Iliad and Odyssey, and these may be readily distinguished if we use the word Lotus to designate the trifoliate plant on which the horses fed, which some affirm to have been the Melilotus; retaining the form Lotos for the Zizyphus or Jujube tree in whose fruit the Lotophagi took delight.

Time would fail us to deal fully with the legends associated with the Lotus and Lotos, so we content ourselves by referring the reader direct to Homer and his expositors, to Theophrastus and Pliny, to Gerard the herbalist and Tennyson the poet, and to such other writers as these will suggest if he still wishes to carry his researches to the fullest extent. And now, though our subject might have been greatly enlarged if we had quoted from others instead of falling back on our own researches, it is time to gather up the results of our study.

Our ideal Homeric Garden will be an extensive one. It will be divided into flower borders, vegetable plots, tree gardens or boskets, vineyards and fruit gardens, lawns and pastures, cornfields and plantations. In the flower borders we shall find a place for such plants as the Poppy, Hyacinth, Iris, Larkspur, Narcissus, Violet, Crocus, Asphodel, Lily, Gladiolus and some others. Ivy is mentioned (*Odyssey*, xvi, 50) as an ornament. Onions, or Leeks (*Iliad*, xi, 629) we shall grow to give a relish to the wine cup, and Garlic or Allium of kinds to recall the Moly. For this see the note in Pope's translation of the *Odyssey*, x, 365. Cresses there will be, with Lettuce, Parsley and Beetroot; Barley, Wheat and Flax will also find a place.

In lawn and meadowland, glade and lakeside, the Melilot, or Clover, and the Parsley will flourish, while the fruit garden and orchard will bear abundance of Figs and Olives, Pears and Apples. These last may be either the Pomegranate, Apples of Gold such as Oranges, Lemons and Citrus, or the more homely yet not less delicious fruits with which our own orchards abound. The Vineyard will be in evidence though we may require to enclose it with glass.

For shrubs and trees we shall turn to the Tamarisk and Lotos, or Zizyphus, the Willow, Elm, Plane and Poplar, the giant Oak and towering Pine. Alder, Cornel and Cypress will blend with Cedar and Frankincense, while the Ash and Beech may justly claim a place. The list is no mean one, and will supply us with plants which, like those in Eden, are alike pleasant to the sight and good for food. *Hilderic Friend.*

NOTES FROM EDINBURGH.

Trees and shrubs have taken on their autumn tints quickly and there are now many beautiful colour effects. There are countless suitable subjects to select from with colours and shades to suit all tastes, from the golden-yellow European Acer platanoides to the glorious fiery-crimson-tipped Stranvaesia Davidiana of China, or the Japanese Maple, Acer palmatum, and its many varieties with glorious colour. From amongst the Rowan family, Pyrus Aucuparia discolor and P. rufo-ferruginea might be taken as examples. The Scarlet Oak, Quercus coccinea and its companion Q. rubra, the Red Oak of North America, are well worthy of mention among trees grown for autumn effects. Those who have colour schemes in view and intend planting for autumnal effects should pay attention to selection so that there may be no regrets and disappointments when next autumn arrives.

The advancing season has reduced the number of flowering plants but, fortunately, there are still a number whose late-flowering period is more than welcome. One in particular, and not commonly known, is Dracocephalum Forrestii, a native of China. As a bedding plant it is unsurpassed for its beauty and fragrance. It grows best in a soil which is retentive of moisture but must also have ample drainage. From seeds sown in February the seedlings planted out in April will produce plants to flower in September and be at their best in October. The main stem terminates in a crowded head of beautiful blue, labiate flowers, while from twelve to eighteen lateral, flowering shoots are also produced, giving the whole a bushy appearance.

The late-flowering form of Gentiana asclepiadea is still adding beauty to its drab surroundings and looks best when grown in large clumps. It responds to plenty of moisture and looks very pretty by the pond-side.

The persistent-flowering Dianthus Knappii, a native of Hungary, is very attractive; being yellow in colour it is unique among members of that family. The flowers are borne on stems with long internodes, which give it a straggling appearance, but its floriferous habit compensates for this effect. Few cuttings are available for propagation, but the plant may be raised easily from seeds.

Omphalogramma Farreri, which develops winter buds, and flowers early in the spring, before the leaves are fully expanded, has for the second time this year gone through this routine. During the recent heavy rains it shed its leaves and has since produced two beautiful, perfect flowers without any leaves appearing from its miniature Cabbage-like buds. This effort may be detrimental to its future welfare, but at present it looks quite happy. In the same family, Primula chionantha and P. malanops are still in full bloom. Both are alike in habit and growth, except for the colour of their flowers, the former being white and the latter of a violet-purple colour.

The mildness of the season has enticed quite a dozen plants of Meconopsis integrifolia brevistyla to open their large yellow flowers, and this little group is enhanced by appearing over and being surrounded by a thick carpet of fallen autumn leaves from the Lime trees near by.

Schizostylis coccinea deserves all the praise given to it, both for its rich, deep-red flowers and its usefulness at this season. The delicate pink variety, Mrs. Hegarty, is not behind the species for beauty, and both can be relied on to charm lovers of the Iris family. They require a dry, sheltered situation to protect them from frost.

In the rock house, Nerine Bowdenii, N. candida and N. sarniensis are all showing many wonderful spikes of flowers. N. candida, with pure white blooms, looks very pretty contrasted with the other two, which are pink and salmon-coloured respectively. They seem to enjoy the freedom of being planted out, and look more natural than when grown in pots.

A pretty little plant of Coris monspeliensis is also interesting; although it belongs to the Primula family it does not look like any member of that group. It is of dwarf habit and its slender stems, with somewhat small, prickly leaves, terminate in inflorescences of beautiful pink flowers. Calocephalus Brownii, although not in flower, is prized for its beautiful, silvery foliage. Not being quite hardy, it requires protection and is quite at home on a dry ledge in the rock house. Helichrysum crassifolium is also a very useful plant for foliage effect as its grey, woolly leaves make it very attractive. For a companion, Lotus Bertholetii covers a square yard of rock-work with its feathery branches of small, grey, spiny leaves, and in summer it produces countless crimson Leguminous flowers which make a fine picture. *Alex. McCutcheon.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

That graceful Chinese Poppywort, Eomecon chionantha, does not behave nicely with us, no doubt requiring stronger sunshine than we can give it to do itself justice. Here it grows vigorously, putting up plenty of its handsome leaves and spreading far with fleshy, subterranean stolons, but its white flowers are few and far between. Out it must go, therfore, to make way for something more generous; but I am sorry to expel it, because there is no surer remembrance of absent friends than plants which were their gift, and this one was bestowed on me by that enthusiastic gardener, the late Sir Charles Bine Renshaw, M.P.

Amaryllis Belladonna resents a sloppy summer such as we have just passed through, and makes but a meagre display of blossom. Not so another Cape bulb, Nerine Bowdenii, which shows complete indifference to the character of the season, and now, in mid-October, presents us with a crowd of its frilled, rosy flowers. If it were more generally known it would be seen more often in the autumn border, for it is a hardy subject, although in cold districts it should be planted at the foot of a south wall. A charming effect may be secured by planting Crocus speciosus Aitchisoni with the Nerine, the pale violet of the Crocus harmonising admirably with the bright pink of the other. Another good autumnal combination consists of Gentiana sino-ornata, planted round or in front of Polygonum vacciniifolium. Again, Rudbeckia speciosa being half the height of Aconitum Fischeri, may be planted in front of the latter, the clear golden rays of the first contrasting admirably with the cool blue of the last.

All colour being purely subjective, it follows that the sensation of colour varies among individual observers; but I confess to having been surprised to see the so-called Golden Elder recommended as a choice shrub in *The Gardeners' Chronicle* of October 8 (page 285). Amateurs are accustomed to turn to *The Gardeners' Chronicle* for guidance, nor, as a rule, do they so turn in vain; but I believe our home landscapes will suffer grievously if many persons follow *A. P. C.'s* advice in planting this coarse, ill-favoured shrub, which already disfigures too many villa gardens. The dry banks which he prescribes as most suitable for it may be far more agreeably clothed with some of the many species of Barberry which are now at everybody's command.

Late-flowering shrubs are ever-welcome, even though their display may not attain to splendour. Among them, Cornus paucinervis may be noted for a place. Introduced by Wilson in 1907, Mr. Bean describes it in *Trees and Shrubs Hardy in the British Isles* as flowering at Kew in late July and August; but in our latitude it shows no bloom until September, and is now, October 14, profusely set with flat corymbs of star-shaped, white flowers. It has proved quite hardy and has here reached a height of five feet, and is a nicely furnished, rounded bush. More beautiful, but more tender, is Eupatorium Weinmannianum, which demands the sunniest possible place to develop the cloud of blossom which at this season envelopes a large specimen in Mr. McDouall's collection at Logan. Our only plant here is screened from the south by a large Ilex, and the flower-buds with which it is abundantly set will not open in time to escape November chill. *Herbert Maxwell, Monreith.*

PLANTS NEW OR NOTEWORTHY.

TRIPTILION SPINOSUM.

It must be twenty years or more since the Dropmore Gardens gave us the fine Anchusa that bears its name and which has proved a lasting memorial to that famous establishment; but so far back as 1827 there flowered at Dropmore for the first time in this country, another blue-flowered plant, Triptilion spinosum, but of quite different character to the popular Anchusa. When this little Chilian subject was first grown it created great interest, and the periodicals of that day have much to say of its rarity and beauty. Most of the gardening journals of that time gave their readers a coloured illustration of the new plant; one of the finest is that in Paxton's *Magazine of Botany* for 1843, tab. 269. It also occupies a page in Harrison's *Floricultural Cabinet*, Vol. 12, tab. 49, where it is entwined with Stephanotis floribunda, then a new plant, but this is a poor picture.

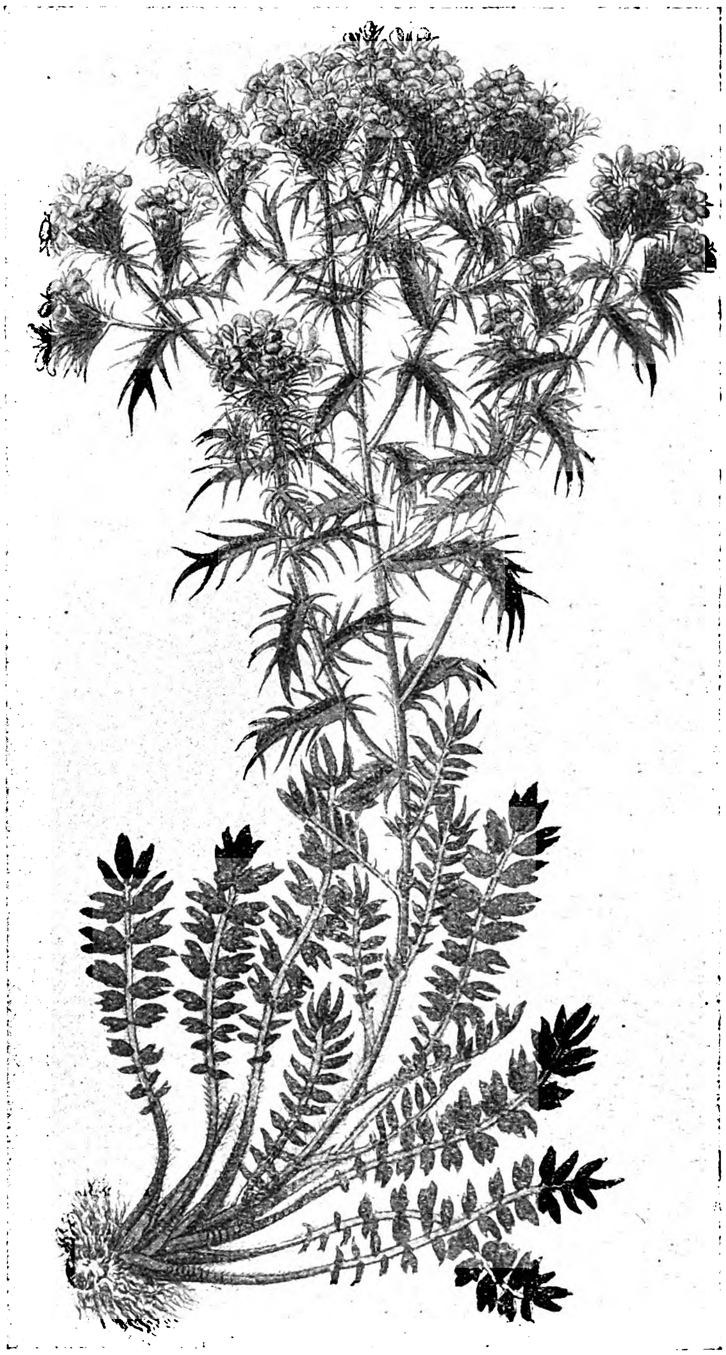


FIG. 156.—TRIPTILION SPINOSUM.

In the *Botanical Register*, Vol. 27, t. 22 (reproduced in Fig. 156), it is well drawn, and a good description of the plant is given. There is also a very neat figure in Maund's *Botanist*, Vol. 5, tab. 224, and here we get the best description of the plant and are informed that it is the "Siempreviva" of the Chilians, owing to the fact that the flowers are much used for decoration and when cut retain the deep blue of the corolla indefinitely. It is said to have medicinal properties; also that the flowers turn white instantly when the stems are placed in hot water. All this, and much more interesting matter, is recorded in the *Botanist*.

Being anxious to see this plant in the living state, I asked Mr. W. J. Vasey, who was for some years resident in Chile, to try and secure seeds, and this he kindly did on two occasions, but only one plant was raised in 1925. This plant has flowered quite freely, but our cultivation may not have been of the best, and having so little material to experiment with very little can be said about its cultivation.

Early in the present year, Mr. G. W. Robinson an old Kewite, gardener at the Villa Serena, Vina-del-Mar, Chile, sent abundant seeds, so that in many gardens there are good stocks of plants which ought to be in evidence during 1928.

Mr. Harold Comber also met with the plant during his Chilian travels and brought home seeds during the present year.

It is only now that anything like a fair opportunity has occurred to grow this species as it was very scarce during the period of its first introduction. It is probably hardy, as Lothian in his book on rock plants, published in 1845, records it as growing on his rockery in Argyllshire. I have seen sufficient of its behaviour to conclude that it dislikes heat, and always looks healthiest when in a cold frame.

The genus Triptilion belongs to the Natural Order Compositae. T. spinosum is a dwarf, shrubby-looking perennial with small, sessile, lanceolate leaves which, when grown cool, are stiff, with spiny points. The flowers are finely arranged in a terminal corymb, very handsome, of intense blue colour—a delightful shade met with in few plants. The root is tuberous.

Mr. Robinson also sent seeds of a white-flowered species, which is probably an annual; this has flowered in many gardens during the present year. *T. Hay, Hyde Park.*

WOOD WASPS.

We have in this country two large Wood Wasps, Sirex noctilis and Sirex gigas. Both are frequently found, and they always cause alarm and no small excitement when they come into the hands of the uninitiated, S. gigas, the Striped Wood Wasp, usually causing the most alarm on account of its hornet-like appearance.

They are both large insects, usually measuring about two inches in expanse, but they are somewhat variable in size, the males especially being at times quite small.

Sirex noctilis, or the Steel-blue Wood Wasp (Fig. 157), as its name implies, is of a steely-blue colour, with black antennae and yellow legs. The last segment of the female is longish and drawn out into a short, thick spine. Below this there is a long, horny process—the ovipositer—for the purpose of laying eggs in the timber of Fir trees.

Sirex gigas, on the contrary, has an orange-yellow abdomen, with a broad, blackish-brown band across the middle. As in the former species, the female is provided with a long ovipositer, and it is this process—often mistaken for a sting—which causes the insect to be held in awe. Whereas the females are totally different in coloration, the males of both species are somewhat similar, the bodies being yellow with darker bases and tips. S. gigas, however, may be known by its yellow antennae and somewhat duller abdomen. The males of these species are not provided with the long sting-like process seen in the females.

In all probability both species were introduced into this country in timber, and here they have settled down, their numbers being augmented each year by means of shipments of timber from overseas.

The eggs are laid under the bark of Fir trees, and it is said that only sickly trees are attacked. The larvae, on hatching out, bore their way into the hard wood, leaving a perfectly round gallery. When full-grown they are large, fleshy grubs, creamy-white in colour and provided with a pair of legs on each of the first three segments, the remaining segments being provided with a pair of fleshy, wart-like stumps. The last segment is considerably longer than the preceding segments and ends in a short horny spine. They change to pupae in a previously constructed cell, generally just under the bark, the "wasps" hatching out the following summer. "Wood Wasps" may be found during most of the summer months and even until November, when they are active on hot, sunny days. Owing to their slow and heavy flight they are not likely to be passed unnoticed.

They are distributed in timber and though usually to be found in the vicinity of wood-yards, they may put in an appearance almost anywhere, and have been known to hatch out in rooms of newly-built houses, three or four appearing each day for several weeks.

Though breeding in this country, their headquarters are the Pine forests of Germany and northern Europe, where they often cause serious loss. In this country, however, they seldom occur in sufficient numbers to cause really serious damage, though undoubtedly they are increasing yearly. On occasion, they have been known to cause a certain amount of loss by rendering the timber fit only for fire-wood. *C. A. W. Duffield.*

MESEMBRYANTHEMUM.

(*Continued from p.* 291.)

I am of opinion that this genus has been much neglected by collectors in South Africa. It is very probable that several more species remain to be discovered, and as the localities of most of the old species are unknown, it is desirable that they should be rediscovered and their natural habitat made known, as well as information obtained as to the amount of variation that exists among the different species in their native habitats.

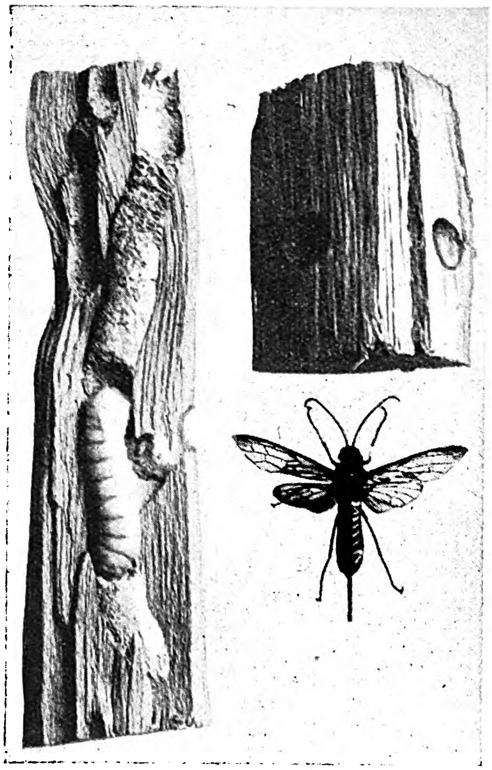


FIG. 157.—THE STEEL-BLUE WOOD WASP.
(Sirex noctilis). Left: gallery showing larva; right: damaged wood and wood wasp.

According to information received from Dr. Muir, the species of Glottiphyllum grow in: "all sorts of places; among gravel, stones, under shrubs and in the open, on thin soil covering rock-slabs and in deeper soil, rarely in rock-crevices." Under cultivation, I find that several species will endure great drought well.

The determination of the species of this genus from descriptions alone is a very difficult matter, therefore, to aid cultivators to identify them, I have made and added sketches of the leaf-tips of most of the species, from living plants, where possible, the tips of both leaves of a pair being represented, as I find that the character of the leaf-tip taken in conjunction with that of the flower very satisfactory for identification purposes; and it is hoped that used in conjunction with the key to the species, these sketches will enable cultivators to correctly determine most of them, but the descriptions should be consulted as well. Hybrid forms, of course, cannot be named by their use. Further, I would also point out that as most of the figures and descriptions are made from plants cultivated in Europe, they may not quite coincide with native South African specimens as, for example, I have been able to indicate in the case of G. fragrans, where it will be seen that the small ovate leaves of a native-grown plant are utterly different from that of the cultivated flowering plant that will also be figured; yet under cultivation the leaves gradually pass from the simple ovate form into the other forms. With reference to the names of these plants I would again repeat that where determinations are made by means of the very fine figures of Salm Dyck's work on Mesembryanthemum and the erroneous names he has applied to those figures—accepted as being correct without investigation (as all monographers have hitherto accepted them), confused nomenclature will certainly be maintained.

As the synonymy of this genus is exceedingly complicated I give at the end a synonymic index for the purpose of reference.

In the diagrammatic illustration of the generic structure (given on p. 290) the top of the ovary is represented as but very slightly depressed at the centre. The amount of depression, however, varies with the species, for in some species the stigmas are inserted at the bottom of a deep, cup-like depression in the top of the ovary.

Most, if not all of the species of this genus are very minutely ciliate on the edges and keel of the young leaves, a character so common that I have not mentioned it in all the descriptions. The epidermis of the leaves of many species has a somewhat remarkable surface. To the naked eye and to the touch the leaf seems to be very smooth and is often shining, but if examined with a strong pocket-lens, with light falling upon it in a certain way, the surface-cells (or many of them) will be found to be raised and linear or oblong and arranged in rows transverse to the leaf. In some species, however, such as in G. linguiforme, the surface-cells are not at all raised in that way, but are even all over the surface. I am aware that this does not give full detail of the surface-cell structure, but it will suffice to make my meaning clear to the average cultivator armed only with an ordinary pocket-lens.

Several species in an adult state have their growths pressed upon the ground, with the leaves edgeways to the sky, but in the younger stages, or when not fully exposed to the sun in the open air, the leaves are generally more or less ascending so that this character cannot be relied upon as being always of specific value.

In my former account of this genus I gave the date of Haworth's *Observations on the Genus Mesembryanthemum* as being 1794; that is the date on the title-page, but I find that the book was issued in two parts, the second part, which contains all the descriptions, being dated 1795, as hereafter quoted.

KEY TO THE SPECIES.

This key to this very difficult genus is the best I have been able to construct from the material available, and may not always prove satisfactory, as I find that the same plant sometimes varies considerably from year to year, and I have not been able to provide for all variations, as some species are very versatile; but would here note that the hook at the end of the leaf is sometimes absent from leaves of species that normally possess it, and the pustule at the base of the leaves of certain species sometimes disappears from starved plants; and also in some species the leaves may now be in two ranks, and at another time the pairs obliquely cross one another!

1. Flowers with distinct pedicels ¼–2½ inches long. 2

Flowers sessile or subsessile, *i.e.*, with pedicels not rising above the leaf-sheaths or not more than 1–2 lines above them. 14

2. Leaves with two teeth or a slight hump on the flat face, and not more than 3–4 lines broad at the middle. 3

Leaves without teeth or a hump on the flat face, but often with an oblique or slightly hooded ridge or hook at the end of the flat or concave face. 4

3. Pedicels quadrangular, 3–4 lines long **2, difforme**

Pedicels terete or 2-edged, 6–12 lines long. **3, semicylindricum**

4. Leaves 2–3 lines broad at the middle and the leaf-pairs crossing one another at right-angles; pedicels 1¾–2½ inches long; calyx 5-lobed (in all other species 4-lobed). **27, ochraceum**

Leaves mostly 3–6 (but sometimes up to 7) lines broad at the middle, broader at the base, and, except in 10, *G. apiculatum*, pellucid-dotted as seen when held against the light, and the leaf-pairs more or less obliquely crossing one another. 5

Leaves 6–12 lines broad at the middle and usually arranged in two ranks (except in 5, *G. cruciatum* and 23, *G. suave*, but sometimes even on the same individual the pairs more or less obliquely cross one another and except in 5, *G. cruciatum*, not pellucid-dotted. 9

5. Leaves, mostly 3–5 inches long, ascending except when old, and of nearly the same breadth throughout, or tapering at the upper part, the larger of each pair slightly concave on the face; pedicel 9 lines long; corolla 2-2½ inches in diameter. **11, concavum**

Leaves 2–3½ incles long, one leaf of a pair usually more or less recurved and the other erect, incurved or spreading, tapering from the base or at the upper part to an acute or blunt point. 6

6. Petals subacute or obtusely pointed, entire. 7

Petals obtuse and minutely denticulate at the apex. 8

7. Apex of the larger leaf compressed into an acute edge or keel; pedicel 1–1½ inch long and 2 lines thick. **6, longipes**

Apex of the larger leaf beyond the flat face compressed, obtusely keeled and bluntly pointed; pedicel very stout, 9–10 lines long and 3 lines or more thick; stigmas 8–9. **5, cruciatum**

8. Apex of the larger leaf beyond the flat face compressed-subterete, obtusely keeled and bluntly pointed, somewhat nose-like; pedicel about 5–7 lines long and 2 lines thick; stigmas 10. **4, subditum**

Leaves tapering to a subacute apex tipped with a short reddish point or mucro; pedicel 6 lines long, 2 lines thick; stigmas 8. **10, apiculatum**

9. (*From* 4; *leaves* 6–12 *lines broad at the middle*). Leaves with a pustule or swelling at the base on the upper side that is usually of a paler colour than the rest of the leaf, but is at times indistinct. 10

Leaves without a pustule or swelling at the base. 11

10. Growths and leaves erect or ascending; leaves 2½–5 inches long, strap-shaped, narrowing at the upper part to an acute or obtuse apex that is tipped (at least when young) with a central, short point or mucro; pedicel 1½ inch long and 1¾ line thick; corolla 2–2¾ inches in diameter; petals obtusely pointed, entire; stigmas 8. **17, erectum**

Growths and leaves ascending or more or less depressed towards the ground; leaves strap-shaped, very obtuse and with or without a small point at the end of the upper edge, or occasionally slightly hooked or obliquely pointed at the apex; pedicels 1¼–1½ inch long, 3 lines thick; corolla 2–2½ inches in diameter; petals acute; stigmas 10–11. **16, longum**

Growths decumbent or prostrate; leaves directed forwards and downwards, the larger leaf of each pair with a very large incurved hook at the apex and with an elevated ridge along one margin of the concave face; pedicels 3–7 lines long, 3–3½ lines thick; corolla about 2¼ inches in diameter; petals obtuse; stigmas 8–9. **16, longum var. hamatum**

N. E. Brown.

(*To be continued*).

THE INHERITANCE OF CERTAIN CHARACTERS IN IMPATIENS BALSAMINA, LINN.

Impatiens Balsamina, Linn. (known to Gerarde in 1596), on account of its large number of colour varieties, seemed to offer opportunities for genetic research. The experiments were accordingly begun in April, 1924, at the Imperial College of Tropical Agriculture, Trinidad, and in a very short time it became obvious that the subject was particularly well-chosen. There where many other characters, besides colour varieties, to be worked out, and the life history of the plant was exceedingly short; germination occurs in five to eleven days, the first flower bud opens thirty-four to forty-three days after germination, and the flowers take twenty-two to thirty-seven days to ripen seeds. The shortest possible life cycle is thus two months, and one can easily obtain three generations a year. Considering the plant's short life, a great many seeds may be obtained from one individual during the two months in which it continues to bear them. As many as 1936 seeds have been gathered from a single plant. The plants occupy very little space, and when many seeds are required the plants should be spaced about eighteen inches from one another, but when in the F_2 and F_3 generations, only about 200 seeds are needed per plant; it was found convenient to sow the seeds three inches apart in rows one foot apart. When plants are needed for crossing they may be raised conveniently in pots. The plants are hardy and do not become diseased.

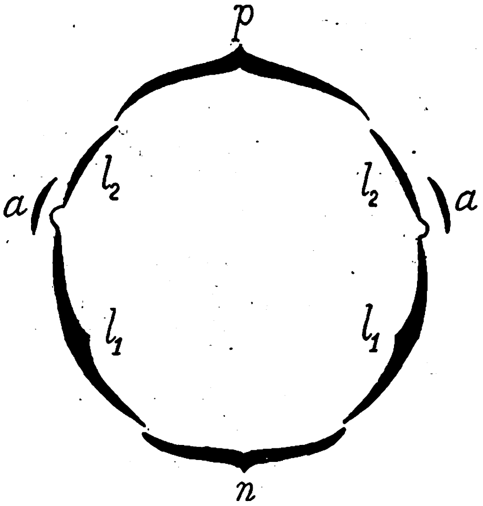


FIG. 158.—IMPATIENS BALSAMINA.

a. a. small lateral sepals; *p.* petaloid sepal; l_1, l_1, large lateral petals; l_2, l_2, usually small lateral petals; *n*, petal holding the spurred nectary.

It will be evident to the reader that the conclusions arrived at have their limitations; the number of individuals per family is too small, especially as most of the latter are of the di-hybrid type, yet the data is sufficient for one to put forward an hypothesis to account for the inheritance of the characters.

Several characters have been studied; the present paper deals, however, with only two of them, viz., (I) Petal Size and (II) Flower Colour, the other characters giving ratios too complex for analysis until further experiments have been carried out.

Structure of the Flower and Details of Crossing.

A normal single flower consists of three sepals, the two laterals being very small, and the petaloid posterior one spurred, and five petals, the two laterals united in pairs (Fig. 158). The whole flower is twisted through 180° due to resupination of the pedicel, so that the petal bearing the spur becomes anterior. The five stamens are monadelphous and syngenesious, closely embracing the five-carpelled ovary.

The anthers open two or three days before the bud, and when the latter is quite small. The five stigmas separate a few days after the flower opens. If left to itself the flower will produce selfed seed, the average number of seeds per capsule being about seventeen. Natural crossing does, however, take place in unbagged plants to the extent of about one per cent., due to the visitation of bees and Lepidoptera.

The parent plants of the crosses, the descendants through six or seven generations from seeds imported from Messrs. Sutton and Sons, were sown in Bamboo pots. Those selected as female parents were placed inside a well-lighted room and were left unbagged; those selected as male parents were placed outside the room and were bagged by stout paper bags being tied over the whole plant round the top of the pot. The flowers and large buds of the female plants were continually plucked off by forceps, so that none of them at any time, after having been placed in the room, produced any pollen. The stigmas of a particular female plant received pollen from one male plant only; the plant, not the flower, then was used as the unit for crossing. The buds of the female plants were kept so far as possible constantly emasculated, so that it frequently occurred that a stigma was receptive at the same time as the appropriate male plant was yielding pollen.

Emasculation was performed by opening the bud by means of flame-sterilised forceps (pinching off one or two of the petals was found necessary) and lifting off the ring of anthers with a flame-sterilised scalpel.

Crossing was carried out by taking the female plant out to the male, removing the bag from the latter and placing the pollen on the stigmas by means of a flame-sterilised scalpel.

The investigations described in the present paper deal with the mode of inheritance of the factors producing the following characters:—(1) Size of the lateral petals; (2) Flower colour.

F_1, F_2 and F_3 plants were grown in the open, no special precautions being taken to prevent visitations of insects. In F_3 it was a simple matter to determine which plants were derived from a natural cross, for if one found amongst a group of plants possessing what in other families was a recessive factor, one or two plants with the dominant factor, one would certainly be able to infer that the aberrant types were not derived from selfed seed. Any plant suspected of being a vicinist has not been considered in the ratios, but the number of vicinists occurring in each family is given.

Of the five crosses made only seeds from the first and fifth were selected in F_1 to give F_2 plants. The F_1 of the first cross contained five plants, giving five F_2 families. Counts were made from the F_3 progeny derived from the first and fifth of these families. The fifth cross, containing only one plant in F_1 was continued to the third generation.

I.—Size of the Lateral Petals.

Considering a pair of lateral petals, the posterior (anterior in a very young bud) may be quite small (simply truncated or possessing a small lobe overlapping the anterior petal), or it may be large and equal in size to the anterior (Fig. 159).

The character under consideration was not recorded in the parent.

F_1.—Of the five F_1 plants, four were small and one was large.

F_2.—The large-petalled variety of F_1 bred true to large, whilst the other families seggregated in the following proportions:—

	Family.	Small.	Large.
	1	44	14
	2	109	27
	3	131	31
	4	98	23
		382	95
Expected		355	119 (on 3:1 basis).

F_3.—Of the twenty-two F_3 families derived from the first F_2 family, five gave only small and eight gave only large. The rest, the selfed progeny of small-petalled parents, segregated in the following proportions :—

Family.	Small.	Large.	Vicinists.
1-1	53	13	6
1-4	47	8	-
1-19	45	17	-
1-30	48	10	-
1-48	41	13	-
1-49	36	13	1
1-56	30	17	1
1-58	61	12	1
1-68	50	16	6
	411	119	15
Expected	397	132 (on 3:1 basis).	

It is evident, then, that "smallness" and "largeness" constitute a simple Mendelian pair of factors, and that smallness is dominant over largeness. The symbol "S" will be used to denote "smallness" and "s" largeness in petal size.

II.—Flower Colour.

The large lateral petals and the fifth petal (the posterior petal in the open flower) give the flower its predominant colour, the bases of these petals and the other petals being in coloured flowers rather more blue. In all flowers, white included, there is a yellow spot on the sepal bearing the nectary, and in coloured flowers the laterals have a light spot on them.

The present paper deals with the inheritance of the following flower colours :—Peach-blossom pink, Magenta-mauve, Rosy-scarlet and Magenta, and their relation to White. In all the coloured varieties with which we are here concerned, the plants possess red stems, whilst the white-flowered forms possess green stems.

Of the F_2 plants one bred true to peach blossom, one to magenta-mauve, two to rosy-scarlet; seven to white in F_3.

MAGENTA × WHITE.—F_1. Four magenta to one magenta-mauve. Evidently, then, one or both of the parents was heterozygous.

F_2.—The five families segregated into the following proportions :—

Family.	Magenta.	Magenta-mauve.	Rosy-scarlet.	Peach-blossom.	White.
1-1	28	6	12	2	10
1-2	1	84	0	27	24
1-3	87	22	22	7	35
1-4	57	20	15	4	26
1-5	66	15	0	0	22

F_3.—Counts were made in the families derived from F_2 families Nos. 1 and 5. The mode of inheritance of the factors involved is made evident by the ratios obtained in the F_3 generation, so we will take the families which segregated into only two colour types first, in order to demonstrate the inheritance of one type at a time.

INHERITANCE OF COLOUR.—As may be seen by inspection of the Table at the end of the paper, the F_3 families segregated into :—

	Coloured.	White.
	674	222
Expected	672	224 (on 3:1 basis).

Evidently there is one factor (say, "P") for producing coloured flowers and red stems, in the absence of which the flowers are white and the stems green (let "p" symbolise this absence).

INHERITANCE OF PEACH-BLOSSOM PINK.—The only family 1-1-22, the progeny of a peach-blossom parent, segregating into peach-blossom and white, gave the ratio: 26 peach-blossom to 19 white, with three rogues (one magenta-mauve and two rosy-scarlet). This, of course, is a very bad 3:1 ratio, but it will be demonstrated shortly that peach-blossom and white are a pair of allelomorphic characters, peach-blossom containing the dominant colour factor "P" and white the recessive "p."

INHERITANCE OF MAGENTA-MAUVE.—Segregation into magenta-mauve and peach-blossom occurs in family 1-1-24, the progeny of a magenta-mauve parent, and gives 51 magenta-mauve to 20 peach-blossom (expected 53:18); magenta-mauve and peach-blossom constitute, then, a pair of allelomorphic characters.

The segregation into magenta-mauve, peach-blossom and white bears out what has been stated of the inheritance of peach-blossom and magenta-mauve. One F_2 and three F_3 families were found segregating into the above types, and the sum of the ratios was as follows :—(See Table for families concerned).

	Magenta-mauve.	Peach-blossom.	White.
	176	62	69
Expected	173	58	77 (on 9:3:4 basis).

Evidently there are two factors concerned—the colour factor "P" by itself producing peach-blossom, and in combination with another factor (say, "M") producing magenta-mauve. The colours will then have the constitution :

PM.	Pm.	pM. p.m.
Magenta-mauve.	Peach-blossom.	White.
9	3	4

The constitution of the magenta-mauve parents was evidently PpMm.

INHERITANCE OF ROSY-SCARLET.—Segregation into rosy-scarlet and peach-blossom occurs in family 1-1-33, the progeny of a rosy-scarlet parent, and gives 61 rosy-scarlet to 22 peach-blossom (seven vicinists—six magenta, one magenta-mauve). The expected ratio on a 3:1 basis is 63:21. Rosy-scarlet constitute, then, a pair of allelomorphic characters.

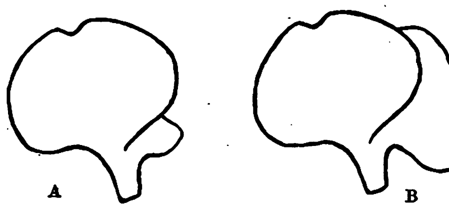


FIG. 159.—IMPATIENS BALSAMINA.

A., posterior petal truncated; B., posterior petal the same size as the anterior.

The segregation into rosy-scarlet, peach-blossom and white bears out what has been stated of the inheritance of peach-blossom and rosy-scarlet. Four F_3 families were found segregating into the above types, and the sum of the ratios was as follows :—

(See Table for families concerned).

	Magenta-mauve.	Peach-blossom.	White.
	129	51	57
Expected	133	44	57 (on 9:3:4 basis).

Evidently there are two factors concerned—the colour factor "P" by itself producing peach blossom, and in conjunction with another factor (say "R") producing rosy-scarlet. The colours will, then, have the constitution :—

PR	Pr	pR pr
Rosy-scarlet.	Peach-blossom.	White.
9	3	4

The constitution of the rosy-scarlet parents was evidently PpRr.

It will have been noticed that the inheritance of rosy-scarlet is precisely analogous to that of magenta-mauve.

INHERITANCE OF MAGENTA.—Seggregation into magenta and magenta-mauve occurs in F_3 families as follows :—

Magenta.	Magenta-mauve.
45	16

This is a good 3:1 ratio. Magenta and magenta-mauve are, therefore, a pair of allelomorphic characters, magenta being dominant.

Segregation into magenta, magenta-mauve, rosy-scarlet and peach-blossom occurred in family 1-1-10 (the parent was magenta), and was as follows :—

	Magenta.	Magenta-mauve.	Rosy-scarlet.	Peach-blossom.
	27	11	7	3
Expected	27	9	9	3 (on 9:3:3:1 basis).

Magenta, as we have seen, is a simple dominant to magenta-mauve; that it can throw rosy-scarlet as well, points to its also being a simple dominant to rosy-scarlet. Hence, we may suppose that magenta consists of a combination of magenta-mauve and of rosy-scarlet. The constitution of magenta would then be "PMR" and the above ratio could be represented as follows :—

PMR	PMr	PmR	Pmr
Magenta.	Magenta-mauve.	Rosy-scarlet.	Peach-blossom.
9	3	3	1

and the genetic constitution of the parent must have been PPMmRr.

Family	Expected on basis.	Constitution of Parent.	Magenta.	Magenta-mauve.	Rosy-scarlet.	Peach-blossom-pink.	White.	
			PMR	PMr	PmR	Pmr	p??	Vicinists.
1-5-33	—	PPMMRr	19	10	—	—	—	—
1-5-76	—	,,	22	6	—	—	—	—
			41	16				
—	3:1	—	43	14	—	—	—	—
1-1-10	—	PPMmRr	27	11	7	3	—	—
—	9:3:3:1	—	27	9	9	3	—	—
1-1-61	—	PpMMRr	26	11	—	—	16	—
1-5	—	,,	66	15	—	—	22	—
1-5-2	—	,,	37	3	—	—	9	—
1-5-15	—	,,	25	5	—	—	8	—
5-30	—	,,	33	14	—	—	16	—
1-5-	—	,,	38	7	—	—	13	—
			225	55	—	—	84	
	9:3:4	—	205	68			91	
1-1-4	—	PpMmRR	34	—	9	—	12	—
—	9:3:4	—	31	—	10	—	14	—
1-1	—	PpMmRr	28	6	12	2	10	—
1-3	—	,,	87	22	22	7	35	—
1-4	—	,,	57	20	15	4	26	—
1-1-6	—	,,	27	9	9	1	12	—
1-1-11	—	,,	14	9	11	0	4	—
			213	66	69	14	87	
—	27:9:9:3:16	—	189	63	63	21	112	
1-1-24	—	PPMmrr	—	51	—	20	—	—
—	3:1	—	—	53	—	18	—	—
1-5-34	—	PpMMrr	—	22	—	—	5	—
1-5-68	—	,,	—	41	—	—	12	—
1-5-69	—	,,	—	36	—	—	16	—
1-5-70	—	,,	—	44	—	—	14	3
		—		143	—	—	47	
—	3:1	PpMmrr		142	—	—	48	
1-2	—	,,	—	84	—	27	24	1
1-1-19	—	,,	—	32	—	13	17	—
1-1-58	—	,,	—	42	—	15	16	1
1-2-94*	—		—	18	—	7	12	1
		—		176	—	62	69	
—	9:3:4		—	173	—	57	77	—
1-1-33	—	PPmmRr	—	—	61	22	—	7
—	3.1	—	—	—	62	21	—	—
1-1-15	—	PpmmRr	—	—	39	10	11	—
1-1-48	—	,,	—	—	30	12	12	—
1-1-50	—	,,	—	—	43	18	21	—
1-1-54	—	,,	—	—	17	11	13	—
					129	51	57	
	9:3:4				133	45	59	
1-1-22	—	Ppmmrr	—	—	—	75	26	4
—	3:1	—	—	—	—	75	25	—

*The only 1-2 F^3 family from which counts were made; it is evidently segregating in the same fashion as 1-1-19 and 1-1-58.

Summary.

(1) The inheritance of a character, not frequently met with in flowers, has been studied viz., the inheritance of the size of certain petals and it was found that "smallness" is a simple dominant to "largeness."

(2) It has been shown that, in the varieties dealt with, there is a colour factor, in the absence of which the flower and stem will be white and green respectively. If it is associated with a blueing factor the flower will be purple ("magenta-mauve"), or if with a reddening factor the flower will be scarlet, or if both are present, in addition to the colour factor, the flower will be magenta.

In conclusion, I must express my indebtedness to my friend, Dr. S. C. Harland, late Professor of Botany and Genetics at the Imperial College of Tropical Agriculture, for suggesting lines of research, and for his valuable assistance in the interpretation of the ratios, and for his kindly criticism of the present paper. I would also like to express my thanks to Sir Francis Watts, late Principal of the Imperial College of Tropical Agriculture, for placing land and labour at my disposal. *B. S. Bedell, B.Sc.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Fruit Thieves at Westminster—At the Fruit Show held at the Royal Horticultural Hall on the 11th inst., I was unfortunate in having a whole collection of fruit stolen, from Class 14, namely twelve dishes of hardy fruits. This happened by 6.15, while my assistants and self were packing two other collections. The classes in which I exhibited were distributed in various parts of the Hall, which made it quite impossible for me to have kept the lost collection under observation. The thieves were very smart in stealing the collection within fifteen minutes of the official time to start clearing, and some very clever thieves must have been at work. It would be interesting to learn if any other exhibitors suffered likewise. A Society of such high standing should afford more protection to exhibitors from such light-fingered individuals by clearing the Hall at the appointed time of closing, and by admitting exhibitors only by means of a clearance pass. This method would eliminate or considerably reduce the number of sharks who are always hanging around exhibitions. *Wm. Jas. Penton.*

Tap-roots.—A friend has recently observed that the reason Cupressus macrocarpa is often blown over is because the tap-root is either removed or bent to one side. In my own case (see p. 294), I transplanted seedlings and the tap-root would be mostly intact, but I can see that Cypress trees planted from pots would have no proper tap-root for anchorage. My friend's remarks set me pondering on the question of tap-roots generally, and it is very clear that they are of prime importance in holding a large tree to the soil. I need draw no diagram to illustrate the principle involved. Nature applied principles long before man came along and discovered them! *W. J. Farmer, The Hive, Redruth.*

Staking Freesias.—I was interested in Mr. Rowles' method of staking (p. 333), which is a very useful way, but I would suggest a better and more economical method, *i.e.*, Allwood's Carnation supports. These wires require only one stake in the centre. They last for years and are easily fixed and adjusted. I have tried many methods and appliances, but Allwood's wires beat everything, and I use nothing else for pots of four-inch diameter and over. *G. H. Dalrymple, Bartley.*

Imported Flowers at Exhibitions.—Further experience at flower shows this summer accentuates the desirability, nay, the real necessity of resisting the further or continued introduction in non-competitive trade exhibits of produce not raised by the exhibitor, otherwise it may grow into a habit, and become a recognised custom; an undesirable one, misleading to the public. It is also desirable that the leading horticultural societies should allocate expert judges for each important class of plants, and instruct them to give fewer marks for mere arrangement, and more for the quality, rarity or variety of the subject exhibited, unless it is a mere decorative group. Take the case of a well-known and excellent cultivator of Gladioli in the north, whom I have in mind; it will apply to other flowers and other exhibitors in like case. He spends an infinitude of care and labour, he gives a great portion of his own time to their cultivation, and raises some very lovely new varieties. He enters for a leading exhibition and looks forward with a thrill of anticipatory triumph to the day of the show. He stages his exhibit and those who are connoisseurs of Gladioli assure him that he cannot fail to secure the coveted highest award. Nothing of the kind! The cards are brought around and he finds that the first prize has gone to flowers that are better "put up" than his, *i.e.*, with some nice Asparagus in and about it—"a real credit to the show." He is staggered. His trade friends rally round and assure him that the award is "nothing short of a scandal." Perfect strangers address him in the same strain. He retires home with diminished head and decides that he will not risk the same treatment next year. Is this to the good of horticulture? Much the same happens with the exhibitor of a trade group "not for competition," for medals awarded to which there is now great competition. He succumbs to a rival firm who may have purchased English or foreign flowers by the van load. The disgusted exhibitor of his own new and rare productions gets every kind of advice given to him: "Leave that particular society or show alone"; "Arrange your flowers with a background of pink with green spots, as it is believed that this is the particular colour which appeals to the President of the Society"; "Make yourself more known personally to the powers that be"; "The best thing is not to mind, judges are bound to make mistakes"; "Why don't you buy a lot of flowers like so and so?" Orchids and fruit sections usually have special judges, but certain show sections are frequently judged either by specialists in another subject, or by a committee composed of excellent men of varied horticultural attainments, of whom perhaps none have any real expert knowledge of the particular class of plants. The time has come, for instance, for the Gladiolus to be judged by Gladiolus experts. *Nurseryman.*

PUBLIC PARKS AND GARDENS.

Poole Town Council has under consideration the provision of a recreation ground for Branksome.

The National Playing Fields Association has been asked to negotiate for the acquisition of four sites, totalling thirty-five acres, for conversion into playing fields. The Town Council has purchased ninety-nine acres of land at Derwent Crook for pleasure grounds.

The Miners' Welfare Fund Executive has made a grant of £1,000 towards the provision of a recreation ground and park for Caerau, Maesteg.

Swansea Parks Committee has authorised the clerk to negotiate for the purchase of land at Ravenhill for a recreation ground.

It is announced that the Whitby Urban District Council has acquired the whole of the sea front from White Point to Upgang and that an anonymous donor has offered to lay out twenty-eight acres on the Gallows Close Farm on the east side of the town, as a public park.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(Continued from p. 333).

ENGLAND, S.

Surrey.—The spring of 1927 will long be remembered for one of the most beautiful displays of all kinds of fruit blossom, but the cold spell from April 27 to May 2 completely wrecked all our hopes of a great fruit crop—9° of frost were registered on April 27, 8° on the 28th, and 7° on May 1st. Nearly all bush fruits suffered very much, especially dwarf, bush-trained Apples—but most of the standards are bearing good crops, although quantities of fruit fell late in the season. Pears are a fair crop on the walls but quite a failure in the open. The same remarks apply to the Plums. Our soil is mostly light and sandy with a gravel sub-soil. *G. Carpenter, West Hall Gardens, Byfleet.*

——Taken as a whole, the fruit crop generally is a very fair one this year. Apples are certainly above the average, including the popular Blenheim Pippin, Cox's Orange Pippin and Lady Henniker. Pears, too, especially on old trees, are carrying good crops, but wall trees are cropped very lightly. Plums were much below the average and so were Cherries, excepting Morello. Gooseberries, Raspberries and Currants have all given splendid crops of very clean fruits this season. Strawberries, too, have borne a good crop of better quality and flavour than last year. Peaches outside were cropped sparsely, but Figs give fair promise, and the same may be said of Filberts and Cob Nuts. The soil in this ancient garden is very light, on gravel. *John H. Shipley, Haling Park Gardens, South Croydon.*

——During the month of June we registered 35·1 mm. of rain, which helped to swell the fruits considerably, especially all varieties of small fruits, which have carried good crops of large-sized berries. All varieties of Apples carry heavy crops, with the one exception of Ribston Pippin. Doyenné d'Ete is the only Pear which is carrying a good crop. The soil here is sandy loam on gravel. *O. Maddock, Ham House Gardens, Richmond.*

——Late frosts destroyed much of the Strawberry bloom and subsequent wet weather spoiled the small crop. Pears, Apples (some varieties), Plums and Gooseberries also suffered from late frosts. Raspberries and Currants benefited from the frequent rains and yielded fruits of good size, although harvesting conditions were bad. The soil is shallow, on chalk. *G. E. Twinn, Polesden Lacey Gardens, Dorking.*

Sussex.—This is the best fruit season we have experienced for very many years. Apples have had to be thinned, also Pears; the latter are a wonderful colour. Plums and Damsons carried exceptional crops. The foliage has improved wonderfully here on the Pear walls; last autumn we removed several inches of soil and brought the roots up to the surface; the trees have responded to feeding. Cherries were very clean and old trees carried a full crop. Strawberries showed an improvement, especially those that were planted in the early part of August, 1926. The soil is a medium loam over green sandstone; in some parts it is a very heavy, yellow clay. Spring frosts only damaged the young growth of box edging; 9° was the most we experienced. *F. Streeter, Petworth Park Gardens, Petworth.*

——The Apple crops are very heavy, with few exceptions; standard, bush and cordon-trained trees are laden with fruits, even after a second thinning; the fruits are fairly clean and of good size. Pears carry a heavy crop on most trees, and the fruits are of good size Plums Prince Engelbert, Orleans, Belgian Purple, and Cooper's Black cropped heavily on standards, while wall trees of Coe's Golden Drop and Reine

Claude de Bavay had good crops, but Denniston's Superb and Gages were damaged by cold weather when in flower and did not set well. Good crops of sweet and cooking Cherries were somewhat spoiled by heavy rains. All bush fruits carried abundant crops; Strawberries were very promising until the frosts, in May, which destroyed them. Figs have cropped heavily and are ripening very well. *E. Neal, Tilgate Gardens, Crawley.*

——Fruit crops are good in this district, as we escaped the severe frosts at the end of April, 4° being the most registered in these gardens. *John W. Dickinson, Castle Gardens, Arundel.*

——Most varieties of Apples carry good crops, but cooking kinds are more heavily cropped than dessert sorts. Mr. Gladstone, Worcester Pearmain, Allington Pippin, Early Victoria, Lord Grosvenor, Lane's Prince Albert and Bramley's Seedling have heavy crops; Cox's Orange Pippin, Beauty of Bath and Newton Wonder, rather light crops. Pears are a failure, with the exception of a few of the coarser varieties. Amongst Plums the only varieties to crop well were Rivers' Early Prolific and Czar, frost having destroyed the abundant bloom of several varieties, notably Victoria and Pond's Seedling. Amongst bush fruits, Gooseberries gave only moderate crops, owing to frost; Black Currants had a good average crop, except in low-lying spots, where frost caught them. Red Currants were abundant but rather small, and Raspberries a full crop of good quality. *E. M. Bear, Magham Down, Hailsham.*

——Although a good deal of fruit dropped from heavily laden Apple trees, we have a heavy crop of good clean fruits. Apple, Pear and Plum trees have rarely presented a cleaner or more healthy appearance. A few varieties of the two former suffered severely from the effects of late April frosts, whereas the condition of others gives ample proof of their ability to withstand even the low temperatures then experienced. Bush fruits were plentiful and of good quality, but Strawberries, although producing a fair average crop, are so undermined in constitution in this part of the county that reliable crops are no longer to be depended upon. Apricots were a failure in this lime-free soil; the tree grows vigorously and flowers abundantly, but the fruits fail to develop. Our soil is sandy clay overlying sandstone rock. *E. Markham, Gravetye Manor Gardens, East Grinstead.*

——All fruit trees promised well at blossoming time, but the severe frosts at the end of April spoilt the prospects for Apples, which were in flower at the time. Pears and Plums were well set by then, and were not badly affected, but the continuous cold east winds, lasting for several weeks, led to very severe attacks of leaf-blister on outdoor Peaches, and the young fruits dropped as a consequence. Such weather conditions generally lead to severe aphis attacks on Plums, but I have never had the trees so clear of this pest before, which result I attribute to winter spraying with Carbo-Krimp. Apple trees also sprayed with this tar-oil wash have remained quite free from insect pests so far this summer, although unsprayed trees have had their usual caterpillar and aphis attacks. *T. E. Tomalin, Stansted Park, Emsworth.*

WILTSHIRE.—Apples are an average crop and clean. There are a few exceptions, namely Bramley's Seedling, Newton Wonder and Charles Ross. These trees were in bloom when the frosts of April 27 and 28, 10° and 9° respectively, destroyed the blossom. Pears and Plums in bloom at this period suffered considerably, consequently some trees carried good crops and others hardly any. Sweet Cherries, May Duke, on south-west walls, escaped frost damage although in bloom at the time; Morello Cherries were fairly good. Peaches and Nectarines carried good crops. Small fruits were good and plentiful, particularly Raspberries and Black Currants. Strawberries were very poor, frost having spoiled much of the early bloom; I may add that in this district many varieties of Strawberries appear to have deteriorated, only varieties like Madame Kooi giving fair crops. The soil is of a light nature on a chalk or gravelly subsoil. *S. W. Tucker, Longford Castle Gardens, Salisbury.*

——All fruit trees promised exceedingly well and set fruits freely, but frosts on April 27, 28 and 30 (9°, 11° and 7°) destroyed all hopes of good crops in exposed positions. Apples Wealthy, Rival, Worcester Pearmain and Cox's Orange Pippin have fair crops, but Bramley's Seedling has entirely failed in this district. Raspberries and Strawberries were all spoiled by severe weather. *H. H. Mills, Fonthill House Gardens, Tisbury.*

ENGLAND, N.W.

WESTMORELAND.—The fruit crops in this district are under the average, owing to the late frosts and sunless weather, excepting Cherries, Peaches and Nectarines, which we had protected. The soil here is for the most part of a gravelly nature. *Robert Dacre, Underley Gardens, Kirkby Lonsdale.*

——All fruit crops were exceptionally late as the result of a cold, sunless spring; the minimum night temperatures recorded here for the month of June were the lowest experienced for over a period of twenty years. Small fruits generally were good, including Strawberries. *Jas. Jeffrey, Lowther Gardens, Penrith.*

(*To be continued*).

FRUIT GARDEN.

APPLE WEALTHY.

THE Apple named Wealthy is not so well known in many parts of the country as it should be. In our gardens we have Wealthy as espaliers and also as standards, and for the last three years (and they have been real lean seasons) we have had good crops. Its growth is thin, hence the necessity for carefully pruning the leaders in the standards. If left, the branches will form half circles when carrying fruit. Our soil is gravel over chalk, but with shallow planting the trees have done well. With espaliers, the usual August pruning and tying down gives us good results, and this season we had a heavy crop. The fruits are of average size, slightly ribbed and streaked on the sunny side. The stalk is very thin. Whilst the flavour, perhaps, is not first-rate, it is good, and following Worcester Pearmain in season, it fits in with the supply of dessert fruits. Even in variable seasons it is a dependable Apple. *G. W. Stacey, Chorleywood Cedars.*

FRUIT TREES AND THE WET SEASON.

AFTER such a wet season it is a pleasant surprise to find buds on fruit trees, especially Apples and Pears, are in excellent condition; indeed, I have seldom seen a finer lot of fruit buds than we have at present. The size and plumpness of the buds is remarkable, which shows clearly that the wet season has suited the trees and assisted them to carry heavy crops of well-finished fruits and plump up their fruit buds, while the roots are in a healthy condition.

"Market Grower" has stated that fruit trees generally were in a condition to carry heavy crops this season after the scanty crops of last year, but I find that trees which bore well last season have also cropped well this year. This seems to emphasize the need of thinning the fruits in their early stage so as to prevent excessive seed production and allow surplus energy to be devoted to fruit-bud formation. This done, and given proper attention, I see no reason why most varieties should not bear annually.

As regards severe frost not destroying fruit blossom, I know of one very good southern garden where fruit trees are particularly well grown and where the crop was scanty last year and this year. Eleven degrees of frost were registered while the trees were in blossom, and the locality is rather damp, no doubt this accounts for the disaster. I believe, however, that a certain amount of frost, provided the atmosphere and blossoms are dry at the time, seldom causes harm. Woolly aphis has been very prevalent this season, and I have never found it spread so rapidly before. The trees in these gardens were clean at the commencement of the year, with the exception of a very slight infestation here and there, and such trees were well treated and cleaned; now the attack is almost general, even on quite young trees. Methylated spirit is quite an efficacious remedy, though it is difficult to use on large trees, hence we are now spraying with a strong solution of soft soap and sulphide of potassium, also with paraffin emulsion, while the foliage remains on the trees, but more drastic measures will be carried out so soon as the leaves have fallen. I wonder if others are experiencing a similar infestation this season? *R. H. Crockford, Horsley Hall Gardens, Gresford.*

THE APRICOT.

THE Apricot is one of our most esteemed and luscious fruits, but success in its cultivation is by no means certain. For outdoor culture a south-west position and a well-drained border are desirable, and to obtain reasonable success a light, fibrous soil should be provided; on heavy soils, old mortar rubble should be added, but the depth of soil should not exceed two-and-a-half feet to three feet in either case.

It is hopeless to expect a satisfactory crop of fruits unless the blossoms are protected. Two or three thicknesses of fish netting will afford considerable resistance to frost, but glass copings provide the best means of protecting Apricot blossoms. The Apricot often blooms in February, hence the need of protection.

Under glass, the Apricot is more sensitive to heat than any other kind of hardy fruit, therefore it will not bear forcing, and if a close atmosphere or the slightest excess of heat are allowed the blooms will drop in showers. When grown under glass Apricot trees should be placed at the cool end of an unheated Orchard house; during the early stages of growth and until the fruits have stoned, a temperature of 45° should not be exceeded. After the stoning period has passed a temperature of 50° to 55° should not be exceeded unless abundance of air is admitted; even 55° may cause the fruits to fall at this advanced stage. Apricots should not be allowed to suffer from drought during the growing season and when carrying a crop of fruits liquid manure should be given the roots at alternate waterings. *W. J. P.*

VEGETABLE GARDEN.

AUSTRALIAN APPLE CUCUMBER.

THIS very handsome fruit (for, like the Tomato, it is a fruit) is easily grown, and in a collection of vegetables or salads makes a useful variation. Seeds sent me from Australia were sown in heat last April and four plants put out in a large, double-light pit. No heat, either from hot-water or hot-bed was used, but the pits were closed early each day; in fact, the treatment was similar to that given to Cucumbers, except that there was no hot-bed, but the plants require more air and less shade from bright sunshine.

Our plants gave us about seventy-five fruits. These should be pale yellow when fit for use, and are usable for a long time. The flavour is very good, and it is claimed for this variety that it is far more digestible than the ordinary Cucumber. An average fruit weighs about four ounces when ripe and contains a fair number of seeds. *G. W. Stacey, Chorleywood Cedars.*

SOCIETIES.

READING AND DISTRICT GARDENERS'.

The popularity of the Sweet Pea was evidenced by the crowded attendance at at the fortnightly meeting held on Monday evening last, which was presided over by Mr. J. R. Lloyd.

The lecturer was Mr. A. W. Gower, The Gardens, Calcot Grange, the most successful exhibitor in the Reading district. Needless to say, his lecture was of the most practical character, and he gave valuable hints on the sowing of the seeds, soil for potting, preparing the ground, stopping, staking, tying, picking out side-shoots, mulching, shading, cutting, packing, staging, and pests. He also gave the names of the varieties which he had found by experience to be the best for a six-vase, nine-vase and twelve-vase competition.

A lengthy and interesting discussion followed, which was sustained by Messrs. Townsend, Fulker, Young, Goddard, Beaumont, Reeves, Gear, Pound, Cox, Martin, Waite, Carpenter, Priest, Nugent and Ridsdale.

A hearty vote of thanks was tendered to Mr. Gower.

There was an excellent entry in the competition for three vases of Michaelmas Daisies, and many beautiful examples of these popular autumn flowers were seen in the twenty-four vases staged. It proved a close contest, and the first prize was ultimately awarded to Mr. A. W. Gower; the second to Mr. A. H. Fulker, The Gardens, Elmhurst, Reading; and the third to Mr. T. Butcher, The Gardens, Glebelands, Wokingham. In the non-competitive section, Awards of Merit were granted to Mr. E. A. Beaumont, The Lodge, Copse House, Earley, and Mr. G. Eames, Reading, the former showing some lovely blooms of September Glory Chrysanthemum and the latter Dahlias. Mr. W. A. Plumridge, Wessex Hall Gardens, Reading, showed seven dishes of Apples, to which the judges directed special attention.

ROYAL SCOTTISH ARBORICULTURAL.

(Aberdeen Branch.)

Despite most unfavourable weather conditions fully fifty members of this branch inspected the woods and policies of Kildrummy on the kind invitation of the proprietor, Col. Ogston. Notwithstanding the drawbacks of unkind weather, the woodmen spent a most profitable and informative day. Professor A. W. Borthwick, of the Chair of Forestry in Aberdeen University, rendered yeoman service by his interesting explanations as the party tramped over moor and fell and through dripping woods.

The party was welcomed at the quarry on the Strathdon road by Brig.-Gen. Charles Ogston, nephew of Col. James Ogston, the proprietor, who joined the company later. Led by Mr. Alexander Forbes, head forester of the Kildrummy estate, the first visit was made to Ardhuncart Hill, where an under-planting of Douglas Fir and Larch arrested attention. The trees are about fifteen years old, and it was noted that the Douglas Fir was making much better progress than the Larch. Previous to the under-planting, a very satisfactory crop of Larch was taken here. The elevation of this wood is about 900 feet. Proceeding along the Den of Kildrummy, famed as a beauty spot, a halt was called at a point where an experimental crop of Douglas Fir is being grown and tested on behalf of the Forestry Commission. Col. Ogston bade welcome to the visitors here, and asked Professor Borthwick to explain the nature of the experiment.

Professor Borthwick said the plot, which is a quarter-of-an-acre in extent, was one of the sample plots which the Forestry Commission had, fortunately, obtained permission to measure in different parts of the country. A number of private proprietors had kindly put certain parts of their woods at the disposal of the Commission for that important purpose. The procedure was to select in different parts of the country different species of trees in representative woods and plantations that were considered to be growing satisfactorily. The trees within the quarter-acre space were numbered, and a ring put round the trunk of each tree, four feet three inches from the ground, in order that the girth might be measured always at the same height. Measurements were made every five years. When thinning took place the trees cut down were used as sample trees, *i.e.*, they were cut into the necessary lengths and measured to ascertain exactly the cubic contents and rate of growth. There was a "surround" to the experimental plot itself from which trees could be cut corresponding as nearly as possible to the average tree in the sample plot, when it was not desirable to cut trees from the sample plot itself.

Proceeding, the Professor explained three methods of thinning adopted: light, medium and severe, according to what was considered the best density for growth. What remained after thinning were known as the elite trees, which were expected to remain as a permanent crop, and as the thinnings were removed these were measured. Referring to the plot under review, the first thinning was made in 1921, when the crop was twenty-one years' old. The volume per acre under bark was found to be 2,600 cubic feet. After 415 trees (giving 3,160 cubic feet) had been thinned out, 2,600 were left on the ground. The next revision was made in 1926, when the plantation was twenty-six years' old. The volume per acre under bark was then found to be 3,796 cubic feet, and the thinning made of 145 trees gave a volume of 573 cubic feet. There was thus a matter of 1,100 cubic feet increase in volume on the quarter-acre in five years. The value of these plots, contended Professor Borthwick, was quite evident. They showed what was obtainable under certain soils and climatic conditions from various species of trees under a certain density of crop, and as figures accumulated they would have a complete history of how trees of different species might be expected to grow in different soils and climates and what would be the yield of timber in cubic feet. The Forestry Commission had written to Colonel Ogston thanking him for the results of the measurements of the Douglas Fir sample plot, and stating that the increment during the five years' period had been highly satisfactory.

After an adjournment for refreshments, a meeting of the branch was held, Mr. John Michie, M.V.O., the President, in the chair. The business was formal, the chief feature being the admission of nine new members. Colonel Ogston thoughtfully set up a large marquee for the use of the visitors, and its shelter was greatly appreciated, the weather at times being very bad and the going hard and fatiguing even to the younger members. It was observed that the veterans of the party held their own with the best, for to the old woodmen the day's doings were but a repetition of what they had to undergo when carrying out the usual routine of a forester's day.

The party then proceeded past the ruins of Kildrummy Castle, built about 1250 by Bishop Gilbert de Mora, and associated with many of the crowned heads of Scotland, including the hapless Mary Queen of Scots. Dr. W. Douglas Simpson, University Librarian, Aberdeen, a noted authority on old castles and keeps of Scotland, delighted the company with a history of the castle, pointing out the principal features and paying warm tribute to Colonel Ogston for his laudable work in preserving to the best of his ability this fine old ruin.

Glenlaff Woods on the estate were then visited and keen interest was evinced in the belts of Larch which are making splendid progress at an altitude of 1,250 feet, and are now about forty years' old. Attention was directed to a measured area of Larch, statistics concerning which were supplied some time ago to the Forestry Commissioners. The average height of the trees is thirty-six feet, with a quarter-girth of four inches, and the number of stems per acres is 865. There was recorded a total volume of over-bark measurement of 1,420 cubic feet. To this had to be added thinnings made at the time of the measurement, which amounted to the removal of 135 stems per acre, representing a volume of sixty cubic feet. Especially notable in this wood was the excellent depth of crown development and the remarkably cylindrical growth of the stems.

After tea, which Col. Ogston kindly provided, Mr. Michie moved a vote of thanks to Col. Ogston for inviting them to view his beautiful estate and for his hospitality. He said they had seen Douglas Fir in its very best state that day, and Larch the better of which they would scarcely find anywhere. Col. Ogston assured the company it had given him great pleasure to have them at Kildrummy, and to show them round. The well-known Scottish comedian, Sir Harry Lauder, who was fishing on the estate, joined the company at tea, and his drolleries and witticisms added not a little to the day's enjoyment.

ROYAL HORTICULTURAL OF IRELAND.

The winter show, held by kind permission given by the late Earl of Iveagh, K.P., on the 19th and 20th inst., in the Covered Court, Earlsfort Terrace, Dublin, proved a bright and pleasing little function, a good display of autumn tinted foliage and berried subjects, with a fair sprinkling of decorative Chrysanthemums, breaking up the possible monotony of some eight hundred dishes of excellent samples of Apples and Pears, to which competition was chiefly confined.

For a collection of twelve dishes of Apples, distinct, eight cooking and four dessert varieties (four fruits to a dish ruled through the schedule), The Stewart Institution, Palmerstown, Co. Dublin (Manager Mr. G. Bower), won first prize with clean, handsome specimens; second, T. Sherrard, Esq. (gr. Mr. J. Synnot), Maryborough, Douglas, Co. Cork; third, Captain Daly (gr. Mr. J. Murtagh). In the class for twelve dishes of cooking sorts, distinct, Lord Cloncurry (gr. Mr. W. Hall), Lyons, Co. Kildare; Captain Daly and The Sisters of Charity (gr. Mr. J. Tully), Ravenswell, Bray, were thus placed, and in the class for six dishes, four cooking and two dessert, Sir F. W. Moore (gr. Mr. P. Downes); O'Neill Donnellan, Esq. (gr. Mr. D. Colohan), Windsor, Monkstown, and Miss K. Darley (gr. Mr. P. Mohan), excelled. Six dishes of cooking, distinct, found winners in Mrs. Pontet, St. Gatiens, Rathfarnham; Mrs. Hamilton (gr. Mr. C. Pilgrim), Luttrellstown, Clonsilla, and Captain Daly.

Six dishes of dessert varieties were best shown by Mr. J. Sherrard, Mrs. Bernard (gr. Mr. J. Dawson), Belfield, Dublin, and Captain Daly. For the best four dishes of dessert varieties, distinct, Major Kelly (gr. Mr. J McDermott), Montrose, Donnybrook; Mrs. Stapleton (gr. Mr. P. Clinch), Wyvern, Killiney; and Mr. J. Moran, Mt. Bellew, Co. Galway, were placed as named.

In the single dish class for Allington Pippin, represented by a score of competitors, Mrs. John, Roseville, Bray; Captain Hutchinson (gr. Mr. T. Elliot), Belcamp, Raheny, and Madame Fottrell (gr. Mr. W. Taylor), Richelieu, Sydney Parade, Dublin, excelled. Blenheim Pippin, with but few entries, found winners in Mr. T. Sherrard and Captain Daly, while Charles Ross was best shown by Lord Cloncurry; The Hon. A. E. Guinness (gr. Mr. W. Stevens), Glenmaroon, Co. Dublin, and Sir Arthur Ball (gr. Mr. W. Stewart), Carrickmines, Co. Dublin. Cox's Orange Pippin was exhibited a dozen times, and the Stewart Institution, Mr. T. Sherrard and W. Fitz-Gerald Esq. (gr. Mr. J. O'Leary), Ovens House, Co. Cork, were thus placed in order of merit. Ellison's Orange does not appear to have become popular with Irish growers, and the three entries were from Mrs. Stapleton, Miss K. Darley and Mr. Ed. Kelly, Rosebank, Kingstown. For James Grieve, Miss K. Darley, Captain Daly and Madame Fottrell outran a score of competitors, while King of the Pippins was best shown by Miss K. Darley, Miss Erck (gr. Mr. E. McDonald), Sherrington, Shankill, Co. Dublin; and Mr. F. S. Myerscough (gr. Mr. M. Smith), Clonard, Dundrum. Gascoyne's Scarlet, to pass through a three-inch ring, was well shown by Mr. Wilfred Tighe (gr. Mr. W. Carson), Rosannagh, Ashford, Co. Wicklow; Captain Daly, and The Sisters of Charity. Lord Cloncurry, Sir Arthur Ball, and Mr. T. Sherrard showed the best dishes of Rival. That Ribston Pippin still finds favour was evident by the entries, Major Meade(gr. Mr. J. Carbury), Ballyhassig, Co. Cork; Mr. J. E. Geoghegan (gr. Mr. W. Snow), Belcamp, Raheny, and Miss K. Darley excelling. For any kind of russet Mr. O'Neill Donnellan was first, with Mrs. Hamilton and Mr. J. E. Geoghegan following, and for any other dessert variety not classed in the schedule, Mr. T. Sherrard, Mrs. John, and Mrs. Stapleton were thus placed.

In the sixteen single dish classes for cooking varieties, Lord Derby, Lane's Prince Albert and Peasgood's Nonesuch, were outstanding in quality and quantity, the prize-winners being a repetition of those given in the dessert classes, and although but a couple of dishes of Rev. W. Wilks were seen, these, as contributed by Sir Frederick W. Moore and Mr. J. E. Geoghegan, were very attractive.

Pears comprised a dozen classes, including two for collections, for the latter of which the Stewart Institution and Mrs. More O'Ferrall (gr. Mr. J. Gilleran), Kildangan Castle, Monasterevan, Co. Kildare, were premier winners, with Mr. Ed. D'Olier (gr. Mr. J. Graham), Wingfield, Bray, and Mrs. Hamilton next best. Single dishes were generally well shown and the samples of average merit. The outstanding features in this section were superb samples of Pitmaston Duchess, staged by Miss Pratt (gr. Mr. T. Jackson), the Red House, Ardee, Co. Louth.

There were good entries in the classes for standard bushel boxes of Apples packed for market, Mrs. Hagan, Roseneath, Armagh, being placed first for dessert Apples, for a beautiful sample of fruits perfectly packed; Mr. J. McGrane, Laurelville, Tandragee, being second; and Mr. W. R. Ross, High Street, Lurgan, third; Mr. James Crummie, Artabraca, fourth. For the box of cooking kinds, Mr. McGrane was first, Mr. Crummie second, Mrs. Hagan third, and Mr. Ross, fourth.

Vegetables were limited to two classes, viz., collections of twelve distinct and six distinct kinds, the first prize in the larger class being won by the Hon. A. E. Guinness, and Miss Darley (gr. Mr. J. Murphy), Violet Hill, Bray, with especially clean samples, notably the Celery; the smaller class finding winners in The Hon. Gordon Campbell (gr. Mr. Cook), Clonard, Terenure; Major Kelly, and Madame Fottrell. Classes for cut Chrysanthemums found little response, those for single varieties drawing blank, but this lack was well atoned for by a big bank of bright flowers, decorative kinds, staged by Mr. W. H. Lee, Powerscourt Gardens, Co. Wicklow, for which, combined with a good display of fruit and foliage he was awarded first prize and a Gold Medal.

For twelve vases of hardy berried or foliage plants, the Marquis of Headfort (gr. Mr. W. E. Trevithick), was placed first, and Mrs. Stephenson, Cranford (gr. Mr. M. Buggle), second.

Silver-Gilt Medals were awarded respectively to the Marquis of Headfort (President of the Society), to Mr. G. N. Smith, Daisy Hill Nursery, Newry, Co. Down, and Messrs. Chas. Ramsay and Son, Royal Nurseries, Ballsbridge, Dublin, for fine decorative stands of foliage, plants and berried subjects. Messrs. Watson, of the Killiney Nurseries, Killiney, Co. Dublin, had a tastefully set up group of hardy shrubs. including novelties and choice subjects for which the nurseries are noted. For a collection of hardy Primulas, precociously flowering, Miss Osborne, The Farabond, Drogheda, was awarded a Silver Medal. A stand exhibiting Mortegg, and spraying appliances, contributed by Mr. D. M. Watson, proved especially interesting to fruit growers attending the show from both far and near, a representative of the Mortegg firm being in attendance. The showiest display in the exhibition was a fine representative collection of Paeony-flowered Dahlias, beautifully set up in vases at the entrance to the building, contributed by a friend of the Society from a Dublin garden; this group witnessed to the open weather experienced in and around the Free State Capital.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, October 21, the members of Committee present were Messrs. J. B. Adamson (in the chair), R. Ashworth, A. Burns, A. Coningsby, J. Evans, A. Keeling, D. Losh Thorpe, D. McLeod and H. Arthur (Secretary).

First Class Certificate.

Brasso-Cattleya Muriel var. Invincible.—A large flower, seven inches across, of good shape and even colour, with deeply fringed lip and yellow throat.—From J. B. Adamson, Esq.

Award of Merit.

Cattleya Sylvia, Bolholt var.—From Captain W. Horridge,

Cultural Certificates.

To Mr. A. Coningsby, for Laelio-Cattleya Honoria var. The Shah; and to Mr. J. Howes, for Cattleya Eleanore var. Distinction.

Groups.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), exhibited a group to which a large Silver-Gilt Medal was awarded. Cattleyas in variety, including C. Sargon, C. Hassallii alba var. Hercules, C. Mantinii, C. Eleanore var. Distinction and C. amabile alba were well shown, with Brasso-Cattleya Muriel var. Invincible and B.-C. Joyce Hanmer, and Cypripediums in variety. Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were awarded a Large Silver Medal for a group that contained Cypripedium Dreadnought, C. Pallas Athene, C. Kubele, C. Queen Alexandra, C. Maudiae coloratum, C. Farrieanum, C. insigne Sanderae and C. Wrigleyanum, besides Odontoglossum grande, O. g. aureum, and Cymbidium erythrostylum.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), showed Cattleya Sylvia, Bolholt var. and C. Mantinii nobilior; Laelio-Cattleya Honoria var. the Shah, and Oncidium Rogersii. Messrs. Keeling and Sons, Bradford, exhibited Cypripedium Shogun, C. Goliath, C. St. Andre, C. Christopher and C. Acteaus. Mr. John Evans, Colwyn Bay, staged Cattleya Mrs. Medo var. Brilliant, Brasso-Cattleya Nestor, and Vanda caerulea. Mr. D. McLeod, Chorlton-cum-Hardy, sent a good plant of Cypripedium Reginald Young.

ROYAL CALEDONIAN.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on October 4, Mr. W. J. Thomson, President, in the chair. Mr. J. S. Chisholm, senior lecturer at the Edinburgh and East of Scotland College of Agriculture, Edinburgh, gave a lecture on "The Pruning and Feeding of Fruit Trees."

The exhibits were: Roses, from Messrs. Dicksons and Co., Edinburgh; Dahlias, from Messrs. Dobbie and Co., Ltd., Edinburgh; Apples, from the Edinburgh and East of Scotland College of Agriculture; Apples, from Mr. George Houston, St. Raphael's Home, Edinburgh; tuber with habit of Potato and colour of Beet, from Mr. James Keddie, Davidsons Mains; Citron and Squash, from Mr. Allan S. Bolton, Broxburn.

A Certificate of Merit was awarded to Chrysanthemum Castlehill Beauty, exhibited by Messrs. Wm. Marshall and Co., Castlehill Nursery, Ayr.

BECKENHAM HORTICULTURAL.

At the opening meeting of the winter session of the Beckenham Horticultural Society a paper entitled "Glasshouse Fumigation," was read by Mr. G. A. Piper. Calcium-cyanide, or hydrocyanic acid gas (which has no objectionable smell) was recommended, because most glasshouse insects can be effectively controlled by it. The general procedure is to apply the material along the greenhouse paths, using for the purpose a small thumb pot. Having applied the fumigant, the glasshouse should be closed and locked for the night. Next morning it should be thoroughly aired and allowed to remain open before entering. When fumigation is to take place, a quiet night should be chosen, and the house and plants should be dry, as moisture on leaves will cause scorching. Temperature plays an important part, from 55° to 70° being advisable. The house should be measured to discover its cubic content so as to determine the correct quantity of material to use, the usual amount of calcium-cyanide being at the rate of a quarter-of-an-ounce per thousand cubic feet, as that is safe for the majority of plants, but Carnations and a few others will withstand a slightly stronger dosage.

NATIONAL SWEET PEA.

Annual General Meeting.

October 19.—There was a very good attendance of members of the above Scoiety at the Annual General Meeting held in the Lecture Room of the Royal Horticultural Hall, Westminster.

Amongst the members present were Mr. J. M. Bridgeford, Mr. Robert Bolton, Mr. Hugh Dickson, Mr. George Ireland, Mr. Alfred Dawkins, Mr. Donald A. Blaxill, Mr. J. Stevenson, Mr. Ivan S. Dickson, Mr. W. S. T. Payne, Mr. C. H. Rundle, Mr. Donald Allan, Mr. A. C. Haslehust, Rev. Frank Collins, Mr. H. J. Damerum, Mr. E. W. King, Mr. J. S. Brunton, Mr. E. H. Christy, Mr. Charles H. Curtis, Mr. D. W. Simmons and Mr. Fred T. Wheler.

During the first part of the proceedings the chair was taken by the retiring President, Mr. J. M. Bridgeford. As the Committee's Report and the Balance Sheet for 1927 were printed and circulated they were taken as read. The Report and Balance Sheet show a very satisfactory condition of affairs and that a good year's work had been done. Although, earlier in the season, the weather was none too favourable for Sweet Peas, a very successful show was held at the R.H.S. Hall, Westminster on July 7 and 8, and it is a healthy sign that the gate receipts were decidedly greater than usual. The Report also records that three Challenge Cups were won outright and, in winning the Sutton Cup, which was offered for eighteen bunches of distinct varieties of Sweet Peas, Sir Randolf Baker, Bt. (gr. Mr. A. E. Usher), Ranston, Blandford, won the first prize in a Sutton Cup class for the tenth successive time.

In proposing the adoption of the Annual Report, the President, who is also the Honorary Treasurer, showed plainly that he takes his position seriously, and has a thorough grasp of the Society's finances, for he was able to make most interesting and valuable comparisons between the various items of income and expenditure of the year under review and former years. It appears that in nearly every instance the income items have increased and the expenditure items have decreased; a fact which speaks volumes for the management of this national society. The expenditure item which shows an increase is that on postages, and this, Mr. Bridgeford pointed out, was due to the Secretary's efforts to overcome a certain reluctance on the part of many members to pay their subscriptions early in the year. It would seem that the members have not yet fully realised that their Society's year ends on September 30 and not on December 31. Mr. Bridgeford appealed to the members to bear this in mind, to pay their subscriptions early and so save the Society expense and the Secretary extra work. During the year, £50 has been placed on deposit, and there remains a balance of over £10 in the current account.

The Chairman of the Floral Committee, Mr. Charles H. Curtis, read his report, which recorded that for the first time the Society's Novelty Trials of Sweet Peas had been grown both as disbudded plants and naturally. The Trials, which had been grown by Messrs. Sutton and Sons, at Reading, were very successful.

The membership of the Society continues to increase at a satisfactory rate, for eighty-five new members and eleven kindred societies were enrolled during the year.

Great satisfaction was expressed when the Henry Eckford Memorial Trustees announced that, thanks to the initiative of Mr. J. M. Bridgeford and to Mr. F. T. Wheler, sufficient money had been subscribed to ensure the memorial for all time. The choice of Mr. Alfred Watkins for this year's Gold Eckford Memorial Medal was very popular, and and the older members of the Society well remembered that, in its early days, there was no more zealous supporter than Mr. Alfred Watkins, and he has maintained his interest throughout the Society's existence. Mr. Watkins was President in 1906.

The new President of the Society is Mr. E. H. Christy of Greenways, Ingatestone, Essex. Mr. Christy is one of the best known amateur members of the National Sweet Pea Society. He was Chairman of the General Committee in 1915, and Chairman of the Floral Committee in 1917 and in 1918. There were two nominations for the office of Chairman of Committee, and on the poll Mr. Alfred Dawkins was elected. The Hon. Treasurer, Mr. J. M. Bridgeford; the Secretary, Mr. A. C. Bartlett; and the Hon. Auditors, Messrs. George Cobley, Kay and Co., were all heartily thanked for their past services and re-elected unanimously.

The eligible members of the General Committee were re-elected, with the additions of Mr. F. T. Wheler, last year's Chairman of Committee; Mr. D. W. Simmons, of Messrs. Ryder and Sons; Mr. J. Randall, Leamington Spa; and Mr. Wm. Huffey, Tonbridge. As is usual, there was keen competition for positions on the Floral Committee, and the following members were elected by ballot.—Amateurs: Mr. E. H. Christy, Mr. C. H. Curtis, Mr. F. J. Rogers, Mr. A. E. Usher and Mr. F. T. Wheler. Trade: Mr. D. Allan, Mr. T. Bolton, Mr. G. H. Burt and Mr. C. H. Rundle.

At the close of the formal business the members were entertained to tea by the retiring President, Mr. J. M. Bridgeford, whose kindly and thoughtful hospitality was greatly appreciated.

ROYAL HORTICULTURAL.

The following awards have been made to the undermentioned vegetables by the Council of the Royal Horticultural Society, after trial at Wisley.

Beet.

Awards of Merit.

Intermediate Varieties.—*Feltham Intermediate*, sent by Messrs. Watkins and Simpson; *Intermediate*, sent by Messrs. E. Webb and Sons.

Highly Commended.

Round Varieties.—Detroit Dark Red Re-selected and Flat Egyptian, both sent by Messrs. Zwaan and Van der Molen.

Intermediate Varieties. — Intermediate, sent by Messrs. Cullen and Son; Nonpareil, sent by Messrs. Barr and Sons; Obelisk, sent by Mr. Speed and Messrs. Nutting and Sons; (these four were considered to be alike); Excelsior, sent by Mr. Clucas.

Commended.

Round Varieties.—Early Model Globe, sent by Messrs. Zwaan and Van der Molen; Egyptian, sent by Messrs. Hurst and Sons.

Intermediate Varieties. — Intermediate, sent by Messrs. J. Carter and Co.

Parsley.

Awards of Merit.

Perennial Moss Curled, sent by Messrs. Watkins and Simpson; *Champion Moss Curled*, sent by Messrs. Nutting and Sons; *Perfection Moss Curled*, sent by Messrs. Barr and Sons; *Myatt's Garnishing*, sent by Messrs. R. Veitch and Son; *Exquisite Garnishing*, sent by Messrs. E. Webb and Sons; *Green Gem*, sent by Messrs. Hurst and Son; *Exhibition*, sent by Messrs. Dobbie and Co.; *Giant Curled*, sent by Messrs. E. Webb and Sons.

Highly Commended.

Champion Moss Curled, sent by Messrs. Dobbie and Co.; Defiance Prize Moss Curled, sent by Messrs. Storrie and Storrie; Mascotts Strain, sent by Messrs. Ireland and Hitchcock; Extra Curled, sent by Messrs. Dobbie and Co.; Extra Curled, sent by Mr. Clucas; Supreme, sent by Mr. Brown; and Fern Leaved, sent by Messrs. Watkins and Simpson.

Commended.

Dwarf Perfection, sent by Messrs. Cooper, Taber and Co.; Fine Curled (Fijne Krul), sent by Messrs. Zaaizaadvereeniging, Nunhem.

Obituary.

Lady Nall-Cain.—We deeply regret to learn of the death of Lady Nall-Cain, at Brocket Hall, Hatfield, on October 21. With Sir Charles Nall-Cain, Bt., she took a great interest in their garden at The Node, Welwyn, and more recently in the renovation and extension of the beautiful gardens at Brocket Hall.

Victor Straps.—We regret to announce the death, which occurred in the middle of October, at the age of seventy-one, of M. Victor Straps, a veteran of Belgian horticulture. Born at Lierneux in 1856, he early took up a horticultural career, and after working in various places, founded an establishment at Amercoeur, near Liège. He was a keen propagandist, as well as a hard worker, and attracted to the profession a considerable number of young men. He was one of the founders of the Royal Horticultural Union, and took an active and enduring interest in the Royal Horticultural Society, which was formed by the fusion of three older societies. He became a professor of the Liège Horticultural College when it was first founded, and only retired last year, accepting unwillingly the respite he had so well earned. As professor and lecturer he gained success and affection, and it would be difficult to calculate the numbers of his students who obtained distinctions at the Vilvorde examinations. During the war, when teaching work was more or less at a standstill, he was in charge of the re-victualling arrangements for the town of Liège, and threw himself heart and soul into the allotment movement, in which his sagacious and practical advice was heartily welcomed by all to whom it was offered. He was created by the Belgian Government Chevalier de l'Ordre de la Couronne, and also received the Special Agricultural Decoration of the First Class, besides having been made, by the French Government, Officier du Mérite Agricole. He leaves a widow and son, and will also be mourned by a very large circle of horticultural friends.

ANSWERS TO CORRESPONDENTS.

Names of Plants.—*E. G.* 1, Crassula lycopodioides; 2, Sedum praealtum; 3, Kleinia repens; 4, Othonna crassifolia; 5, Mesembryanthemum Lehmannii; 6, Cotyledon adunca; 7, Mamillaria sp.; 8, too scrappy for identification; 9 and 11, labels detached; the plant with articulated joints is Kleinia articulata, and the other, Crassula Cooperii; 10, Mamillaria gracilis; 12, Aloe mitriformis var. albispina; 13, probably Salvia Grahamii; 14, Mesembryanthemum sp.; 15, Haworthia glabrata; 16, Ceropegia dichotoma; 17, Euphorbia mamillaris; 18, Chrysanthemum uliginosum. — *E. T. R., Southboro'* — 1, Sedum spurium; 2, S. Anacampseros; 3, S. acre; 4, S. sexangulare.—*H. R. D., Heaton Mersey.*—The annual is Saponaria calabrica.—*L. E. S.* 1, Olearia macrodonta; 2, Quercus acuta; 3, Eleagnus pungens; 4, Quercus Ilex; 5, Veronica Traversii; 6, Acer platanoides var. Schwedleri.—*S. P. S.* 1, too withered to identify; 2, Hypericum kalmianum; 3, missing; 4, Tricuspidaria dependens; 5, Veronica speciosa var.; 6, Cassinia fulvida; 7, Ilex dipyrena.—*G. S. L.* 1, Veronica speciosa; 2, Ligustrum Delavayanum; 3, Rhus Cotinus; 4, Laburnum alpinum var. Parksii.

Communications Received.—T. B. (Thanks for 2/6 for R.G.O.F. Box).—F. A. F.—W. A. L. (Thanks for 2/6 for R.G.O.F. Box).—J. C.—D. A.—C. B.—A. T. P.—V. H. L.—G. L.—G. B.—A. M. L.—R. McL.—L. T.—T. P.—F. J.

NEW HORTICULTURAL INVENTIONS.

These particulars of New Patents, of interest to readers, have been selected from the Official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

Latest Patent Applications.

27,161, 27,162.—Ashworth, E., and Ashworth, L.—Agricultural Implements. October 13.

26,917.—Johnsen, O. H. P. W.—Garden tractor. October 11.

27,222.—Whitaker, H. G.—Boxes for fruit, etc. October 13.

26,257.—Bristow, H. J. W.—Garden stake. October 5.

26,299.—Park, F. W. V.—Garden tools, etc. October 5.

Specifications Published.

278,416.—Foot, E. H. W.—Motor-driven agricultural machine.

278,474. — Owen, Dr. B. J. — Method of and means for drying crops artificially.

278,113.—Harrison, T. D.—Root-cutting and cleaning machines.

269,199.—Preparation Industrielle des Combustibles, and Hoffman, A.—Manufacture of phosphatic fertilisers.

277,587.—Speddel, R.—Machines for rinsing and cleaning vegetables such as Potatos, fruit and other edible substances.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

Abstract Published.

A Machine for Catching Flea Beetles.—Patent No. 275,711.

The Flea Beetle which infests Turnips, as a rule, may be expeditiously cleared from a plot of these roots by a simple machine patented by Mr. J. H. Berry, of Gushmere Court, Selling, near Faversham, Kent. The trap which comprises a carriage mounted on wheels and adapted to be pushed by a handle, is provided with transverse rectangular frames supporting collectors coated with sticky material and provided with pendant fringes to disturb the insects during the progress of the machine. The frames are adjustably carried on axles supported by vertically adjustable members, and the wheel supports are also vertically adjustable. Screens arranged at the sides prevent the escape of the insects and also prevent dust reaching the sticky material.

THE LATEST TRADE MARKS.

This list of Trade Marks of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of His Majesty's Stationery Office.

RINGBOAT.

482,380.—Hand Tools having a Cutting Edge, included in Class 12.—Carl Kammerling and Co., Gesellschaft Mit Beschrankter Haftung, 14, Vereinstrasse, Elberfeld, Germany. October 12.

FERTIMAX.

483,136.— Fertilisers. — Stockton-on-Tees Chemical Works, Ltd., Bowesfield Lane, Stockton-on-Tees, Durham. September 28.

JIP.

483,327.—Artificial Manure.—Abington Plant Food Co., Ltd., 347, Wellingborough Road, Northampton. October 5.—Illustration of a Wing Nut and the words Wing Nut.

460,992—6,500S.— Trowels, Spades, Forks and Hoes, etc.—Thos. R. Ellin (Footprint Works) 37 to 41, Hollis Croft, Sheffield. October 19.—Application to be made to the Cutlers' Company, Sheffield.

MARKETS.

COVENT GARDEN, Tuesday, October 25th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0 15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink... ...	18 0–21 0
—yellow ...	12 0–18 0
—bronze ...	15 0–18 0
—white ...	12 0–18 0

	s. d. s. d.
Crotons, doz. ...	30 0–45 0
Cyrtomiums ...	10 0–25 0
Erica gracilis, 48's, per doz.	27 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety ...	12 0– 8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0 5 0
—72's, per tray of 15's ...	2 6 3 0
Solanums, 48's, per doz. ...	15 0 18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	8 0—9 0
—cuneatum, per doz. bun ...	6 0—8 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	5 0—6 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short ,, ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med. ,, ...	1 0—1 6
short ,, ...	0 6—1 9
Camellias, white, 12's, 18's, per box	3 0—3 6
Carnations, per doz. blooms .	2 6—4 6
Chrysanthemums, per doz. blooms—	
—white ...	2 6—4 6
—yellow ...	2 0—3 6
—pink	2 6—4 6
—bronze ...	1 6—2 6
—red	2 6—3 6
— single varieties	2 6—3 0
—spray, bronze, per doz. bun.	10 0–15 0
spray, pink, —per doz. bun.	10 0–15 0
spray yellow, —per doz. bun.	12 0–15 0
spray white, —per doz. bun.	9 0–18 0
Cornflower, blue, per doz. bun.	2 6—3 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	9 0–12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	5 0—6 0
—Violets, Parma, large, per bun.	2 6—3 6
—Ruscus, Green, per pad ...	4 0—5 0
—Solanum fruits, per pad ...	5 0—6 0

	s. d. s. d.
Gardenias, per doz. blooms...	5 0—6 0
Heather, white, per doz. bun.	9 0–12 0
Lapagerias, per doz. blooms .	— —
Lilac, white, per doz. sprays ...	3 6—4 0
Lilium auratum, per doz. blooms	5 0—6 0
—speciosum album, per bun.	— 4 6
—short, per doz.	4 0—4 6
—rubrum, long, per bun. ...	3 6—4 6
—short, per doz.	2 6—3 0
—longiflorum, long, per bun.	2 6—3 0
—short, doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	30 0–36 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle green, per doz. bun.	1 6—2 0
Orchids. per doz.	
—Cattleyas ...	36 0–48 0
Physalis, per doz. bun.... ...	15 0–18 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—3 6
—Madame Butterfly ...	2 0—4 0
—Golden Ophelia	2 0—3 6
—Mrs. Aaron Ward ...	1 6—2 0
—Roselandia ...	2 6—4 6
—Madame Abel Chatenay ...	2 0—3 0
—Liberty ...	3 0—3 6
—Molly Sharman Crawford ...	2 6—3 6
—Premier ...	3 0—3 6
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails ...	2 6—3 0
Violets, per doz. bun.... ...	2 6—4 0

REMARKS.—Supplies of cut blooms have been on the increase during the past week, especially amongst Chrysanthemums, and of these the coloured varieties exceed the present demand, both for disbudded blooms and sprayflowers in bunches; bunch white remains more firm in price. A good supply of Carnations is offered, but these fluctuate in price according to quality. Roses still retain their good quality and prices were a trifle firmer to-day for the best quality blooms. Lilium longiflorum is the most plentiful of Lilies. Single Violets (Princess of Wales) are now arriving in good condition. Camellias and Gardenias meet a good demand. A few single Chrysanthemums are now on sale, mostly disbudded blooms. Supplies of French flowers are now increasing almost daily, and at present they consist of Acacia (Mimosa), Parma Violets, and Paper White Narcissus. France is also sending pads of Ruscus, large-leaved Myrtle, French Fern, and Chillies and Solanums, but these last are not much in demand at the present time.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Lord Derby .	4 0—6 0
—Warner's King	4 6—7 0
—Lane's Prince Albert ...	4 6—7 0
—Bramley's Seedling ...	4 0—9 0
—Other cookers	3 0—5 0
—finest Worcester Pearmain, ½-sieve ...	3 6—4 6
—ordinary ...	2 6—3 0
—Cox's ½-sieve	6 0–15 0
Apples, American—	
—York Imperials, per barrel ...	30 0–38 0
—King David, per case ...	14 0–16 0
—Jonathan ...	16 0–17 0
—Newtown Pippin	13 0–15 0
—American Cox's, per case ...	18 0–20 0
Apples, Nova Scotian—	
—Cox's, per ½ barrel ...	30 0–35 0
—Ribston, per barrel ...	— 30 0
—Blenheim, per per barrel ...	28 0–30 0
—Wealthy, per barrel ...	22 0–24 0
Bananas ...	14 0–20 0
Figs, French, per box ...	1 0—1 6
Grape Fruit—	
—Blue Goose ...	30 0–32 6
—Porto Rico ...	— 30 0
—Jamaica, per case	— 22 6

	s. d. s. d.
Grapes, English	
—Alicante ...	1 3—2 3
—Colmar ...	1 6—3 6
—Gros Maroc...	0 10–1 6
—Muscat ...	2 6—6 0
—Canon Hall...	2 6—5 0
Lemons, Messina, boxes ...	18 0–28 0
—Naples, per case	55 0–60 0
Melons, each—	
—English and Guernsey .	1 6—5 0
Nuts—	
—Cobs ...	1 0—1 2
—Walnuts ...	0 4—0 8
Oranges, per case—	
—Australian Navel ...	30 0–45 0
—Cape Valencia	20 0–25 0
Peaches, per doz.	10 0–24 0
Pears—	
—Calebasse ...	5 0—7 0
—Pitmaston Duchess, ½-sieve	3 0—7 0
—Conference, ½-sieve ...	4 0—6 0
—Beurré Hardy, per doz. ...	2 0—3 0
—Comice, per doz.	3 0—6 0
—Nelis	25 0–26 0
Pears, Californian—	
—Beurré D'Anjou	22 0–25 0
—Beurré Bosc, per case ...	22 0–24 0
—Comice, ½-case	18 0–19 0
Pines, case ...	25 0–37 6
Plums—	
—Californian Prunes, per box	10 0–11 0
—English Prunes	7 0—8 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Aubergines, per doz.	1 6—2 6
Beets	4 0—6 0
Carrots, per bag	4 0—5 0
Cucumbers, doz.	5 0—7 0
—Flats, 36's, 42's	15 0–18 0
French Endive, per doz. ...	2 0—2 6
—Batavia, per doz.	2 0—2 6
Guernsey Beans, per lb. ...	0 6—1 0
Leeks, per doz.	1 6—2 0
Lettuce, round, per doz. ...	0 9—1 6
—French, 5 doz. crates ...	6 0—7 6
Mint, forced, per doz. ...	4 0—6 0
Mushrooms—	
—Cups ...	2 6—3 6
—Broilers ...	1 6—2 0
—Field ...	0 9—1 3

	s. d. s. d.
Onions—	
—Dutch ...	8 6 -9 6
—Spanish ...	14 0–16 0
Parsnips, cwt. .	4 0—5 0
Potatos—	
English, cwt.	5 0—8 0
Sprouts, ½-bag	4 0—6 6
Tomatos, English—	
New Crop—	
—pink	6 0—7 0
—pink and white	7 0—8 0
Old crop—	
—pink... ...	2 6—4 0
—pink and white	2 6—4 0
—white ...	2 0—2 6
—blue ...	2 0—2 6
—Jersey ...	2 0—3 0
—Dutch ...	2 6—3 0
—St. Malo ...	2 0—2 6
Tomatos—	
Canary Island	15 0–18 0
Turnips, per cwt.	3 6—4 0

REMARKS.—There seems to be a little more movement in the business just now, and most sections report improvement. English Apples meet a fairly good demand, although there is some competition from abroad. Cox's Orange Pippin is more plentiful and sells freely, although values are slightly lower for specimens in trays. Blenheim Pippin, Ribston Pippin and King of the Pippins are also popular, but Worcester Pearmain is now past its best. First grade Bramley's Seedling, Lane's Prince Albert and Newton Wonder are in demand at improved figures. Imported Apples have arrived on a large scale during the past week, and being in good condition are selling well. Mushrooms meet a steady demand; both cultivated and field produce is selling well. French salads are popular and sell quite well. Green vegetables are plentiful, the open weather being favourable to large quantities. French Beans from Guernsey are plentiful and cheap, in fact, prices are unduly low for the time of year, and no doubt a spell of really cold weather would help this section. The trade in old Potatos is firm for best grade produce. Choice fruits, such as hothouse Grapes, Melons and Figs, meet a fair demand, but in the case of cold-house Grapes prices are comparatively low owing to the supplies of Dutch Grapes available. English Pears are scarce, the few arriving meeting a good demand. Blackberries continue somewhat scarce and prices are firm. Tomatos are plentiful; new-crop fruits sell fairly well, but old-crop fruits are selling badly, in addition to which there is competition with moderately large supplies from Jersey The condition of these latter is somewhat variable with a corresponding range of prices. Cucumbers are scarcer and selling slightly better.

GLASGOW.

Chrysanthemum supplies have been heavy and prices showed a further downward movement. Blanche de Poitou was worth from 1s. 3d. to 1s. 6d. for 6's; September Glory, 1s. to 1s. 3d.; Almirante, 9d. to 1s.; Harvester. 8d. to 1s.; Delores and Sanctity, 8d. to 10d.; Framfield, White, 6d. to 8d.; Bronze and Pink Consul, 3s. to 3s. 6d. per dozen; Pink Delight, 2s. 6d. to 2s. 9d.; Alcalde, 1s. 6d. to 2s.; Phoenix and Betty Spark (sprays), 6d. to 8d.; and ordinary sprays, 2d. to 4d. Other flowers showed little movement either way. Carnations made 2s. 6d. to 3s. per dozen; pink Roses, 2s. 6d. to 3s.; white, 1s. 3d. to 2s.; and red, 1s. to 1s. 6d.; Lily-of-the-Valley, 2s. to 2s. 6d. per bunch; Lilium Harrissii, 2s. to 2s. 6d. and Calendula, 3d. to 4d.

The fruit market was exceptionally quiet and prices had an irregular tendency. First consignments of Jamaica Oranges (Blue Mountain brand) averaged 18s. 6d. per case; Grape Fruit was cheaper at 22s. to 24s. per case; York Imperial Apples, 35s. per barrel; MacIntosh Red, 16s. to 19s. per case; Jonathan, 15s.; Wealthy, 13s. to 16s.; Winter Nelis Pears, 12s. to 16s. per half-case; Beurré Hardy, 13s. 6d. to 15s.; home Grapes, 3s. 6d. per lb.; Dutch Muscats, 1s.; Italian Prunes, 10s. 6d.; Malaga Lemons, 300's, 38s.; Almeria Grapes, 25s. to 35s. per barrel; French Chestnuts, 4s. per stone.

Scotch Tomatos, 7d. to 10d. per lb.; Jersey, 1s. to 3s. per chip; Mushrooms, 3s. per lb.; Cucumbers, 5s. per dozen; Cauliflowers, 5s. 6d.; Lettuce, 1s. nd Brussels Sprouts, 4s. 6d. per bag.

TRADE NOTES.

MOST gardeners pay homage to "My Lady Nicotine" and those who are cigarette smokers may be pleased to know that the manufacturers of Player's Navy Cut Cigarettes have recently introduced a very tasteful packing. This takes the form of decorative tins, containing fifty and one hundred cigarettes, that will ornament any study or dinner-table.

PATENTS AND TRADE MARKS.—Readers requiring information and advice respecting Patents, Trade Marks and Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

GARDENING APPOINTMENTS.

Mr. H. Kingston, for the past twelve months gardener to G. C. DEAN, Esq., Sandal House, Warwick Road, Solihull, as gardener to W. E. BULLOCK, Esq., Lulworth, Warwick Avenue, Coventry. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

Mr. W. Clarke, for the past five years and nine months gardener to E. R. BEAUSIRE, Esq., Hawkridge House, Hermitage, Newbury, as gardener to Admiral of the Fleet, Sir ARTHUR FANSHAWE, Little Park, Brimpton, near Reading. (Thanks for 2/6 for R.G.O.F. Box.—EDS.).

Mr. F. E. Stokes, as gardener to Sir HENRY IMBERT FERRY, Bart., Strete Ralegh, Whimple, Exeter, Devon.

Mr. F. Pike, for the past ten years gardener to the late W. HARTMANN, Esq., of Milburn, Esher, Surrey, as gardener to C. BURGOYNE, Esq., at Tangley Mere, Chilworth, near Guildford. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

Mr. H. H. Henness, for the past three years gardener to G. COCHRANE, Esq., The Gardens, Athelhampton, Dorchester, Dorset, as gardener-bailiff to Mrs. LABAUCHER, The Gardens, Mapperton, Beaminster, Dorset. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

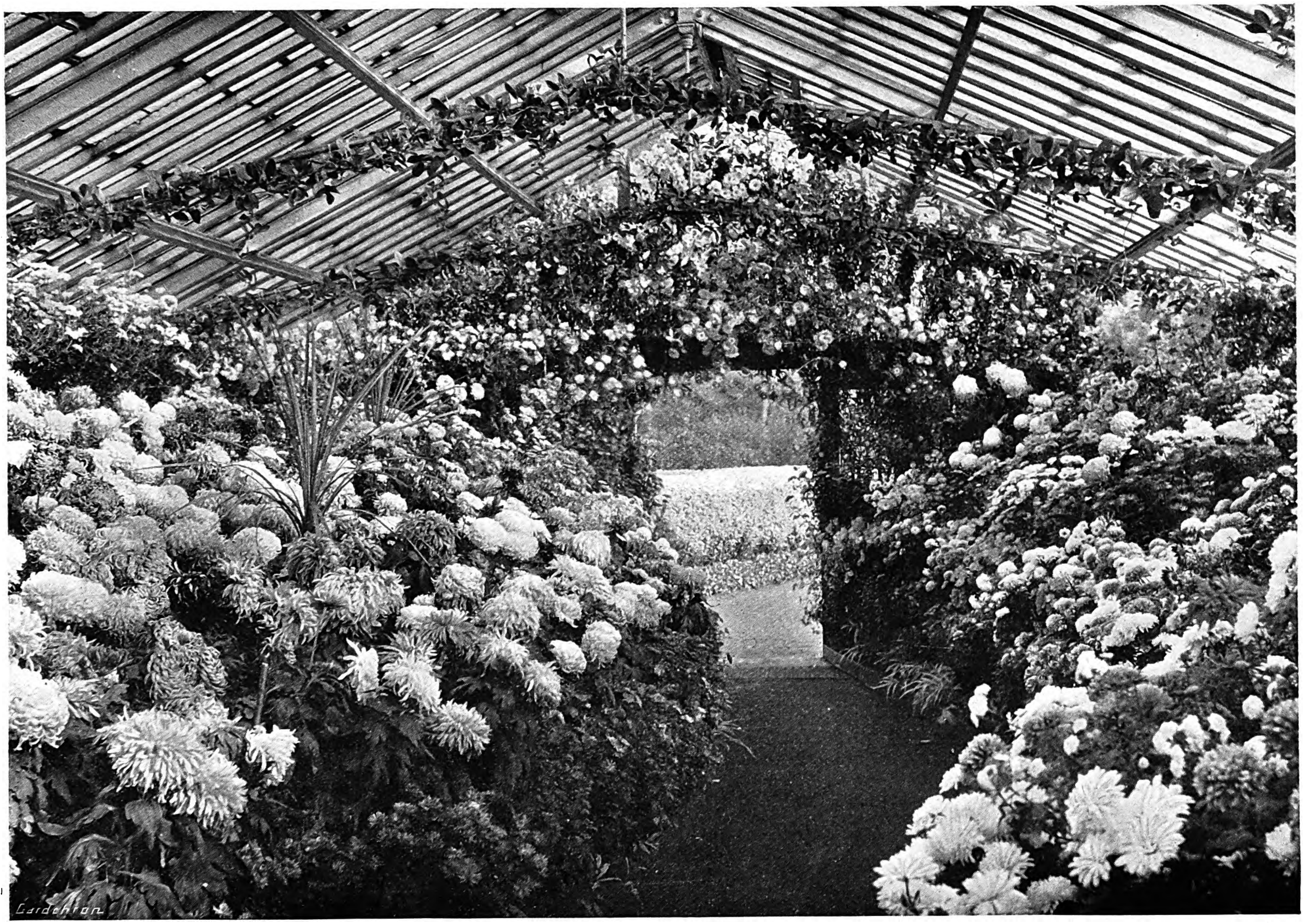
Mr. B. Allen, for the past five years gardener to J. R. HARGREAVES, Esq., Drinkstone Park, Bury St. Edmunds, as gardener to FIRST CONFERENCE ESTATE, LTD., High Leigh, Hoddesdon, Herts. (Thanks for 1/6 for R.G.O.F. Box.—EDS.).

Mr. J. Wareham, for the past sixteen years general foreman to L. CURRIE, Esq., Coombe Warren, Kingston-on-Thames, as gardener to Vice-Admiral Sir RICHARD WEBB, Elbridge, Windlesham, Surrey. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

SCHEDULES RECEIVED.

HENFIELD CHRYSANTHEMUM SOCIETY.—Thirty-eighth annual show, to be held at the Assembly Rooms, on Thursday, November 3.—Secretary, Mr. J. M. Musson, Ivy Cottage, Henfield.

BUXTON AND DISTRICT CHRYSANTHEMUM SOCIETY.—Twenty-second annual show, to be held in the Pavilion Gardens, on Wednesday, November 16. Secretary, Mr. A. Nevil, Thornwood Cottage, Carlisle Road, Buxton.



CHRYSANTHEMUMS AT VICTORIA PARK, EAST LONDON.

THE
Gardeners' Chronicle
No. 2132.—*SATURDAY, NOVEMBER* 5, 1927.

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Supplement Plate.

Chrysanthemums in Victoria Park.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 44.5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 2, 10 a.m. Bar. 30·4. Temp. 55°. Weather, Dull.

The Rôle of Observation in Scientific Discovery.

We welcome the appearance of the current issue of the *Journal* of the South-Eastern Agricultural College, Wye, and are glad to know that with it there is good prospect that the annual series of publications—broken in 1914—will be restored. Among subjects of horticultural interest dealt with in the present issue is a note on the rate of degeneration of Potatos. Varieties affected with Mosaic and other diseases of degeneration are being kept under observation, and, so far as records show at present, it is noteworthy that the progress of degeneration is less rapid than might be expected. The investigation is a very important one and will, we hope, be continued. According to current views, infected strains of Potatos offer copious material through the agency of aphides for the yet further infection of other plants of the variety. If, therefore, the carriers are present in large numbers, deterioration should be very rapid. Evidently, therefore, close observation of the rate of degeneration may provide means of testing the complete validity of the aphis hypothesis, or, alternatively, may enable fresh discoveries of modes of transmission of Mosaic disease from plant to plant. The experiment, indeed, may prove valuable in another direction also. For it would seem probable that if virus diseases of plants are to be stamped out it will only be done by breeding varieties immune, or at least, highly resistant, to these diseases. The best way of approach to this problem would appear to be by breeding from parents which have been shown to possess, at least in some measure, power of resistance, and it would seem that the existence of such varieties may be best discovered by such observations as are now being made at Wye. If memory serves, we already possess in Golden Wonder a variety which exhibits a certain definite, albeit limited, power of resistance to certain virus diseases. The note to which we have referred does not give a list of the seventeen varieties which are included in the trial, but, no doubt, the list will be included in a later publication. In the meantime, it might be worth while to make an especially careful series of observations on Golden Wonder, for although this Potato lacks qualities which make it a good commercial variety, it is, nevertheless, one which people of palate appreciate, and it might prove useful as a starting point for genetical experiment. It cannot, we think, be too strongly urged on modern researchers that observation is at least as powerful a means of advancing knowledge as is experiment. The older a naturalist grows the more he discovers his—and others'—abysmal ignorance of the life-histories and behaviour of plants. We are convinced that there will be a return to the old habits of naturalists, and that observation will be combined more and more with experimentation, and to the great benefit both of science and practice. It will, of course, be clear that the newer observation will be not a diffuse, but a directed observation; that is, the naturalist will set himself a problem, the solution of which is likely to be aided by sustained and close observation. Fashion holds its imperious sway no less in science than in society. Experimentation is in the modern scientific fashion—a very good and indeed essential fashion, too—but there is room among the ranks of scientific workers for trained and patient observers who will find out and tell us more about the ways of development and modes of behaviour of the living plant.

Chrysanthemums at Victoria Park.—Displays of Chrysanthemums in public parks and gardens are becoming increasingly popular year by year, and there is no doubt they are very greatly appreciated by the public, and particularly so in districts where there are comparatively few gardens. Such public displays are made in many public parks in London as well as in the provinces, but few excel in colour and beauty of arrangement the annual exhibition provided at Victoria Park in the north-east part of the metropolis. Our Supplementary Illustration represents a display in the conservatory at that large and useful open space.

Horticultural Club.—We learn that the Committee of the Horticultural Club has made arrangements with the St. Ermin's Hotel whereby members have the exclusive use of a room on Monday, Tuesday and Wednesday of each week, as from November 14, 1927. The St. Ermin's Hotel is close to the old headquarters, the Hotel Windsor, within easy distance of the Royal Horticultural Society's Hall, and near St. James' Park station. The proprietors of the hotel are willing to allow members the full use of the lounge and other facilities of the hotel during the whole of the week, but the Club Room will only be available on the days stated. The hotel offers sleeping accommodation for country members, and there is a restaurant where meals may be obtained.

Unwanted Flowers.—Influenced by the much discussed remarks of Sir William Lawrence at the recent Autumn Show of the Royal Horticultural Society, at the Holland Park Hall, the Editor of *The Observer* arranged that one of his weekly competitions should be to discover the half-dozen flowers which his readers considered could most readily be dispensed with from the garden. On Sunday of last week the list, as decided by the voting of the competitors, was published, and the six "Unwanted Flowers" are Calceolaria, Dahlia, Sunflower, Geranium, Marigold and Aster, in the order named. The next in order of unpopularity were Nasturtium, Petunia, Lobelia, Begonia, Hollyhock and Golden Rod. It would seem that there was a considerable diversity of opinion amongst the entrants for the competition as to the six flowers they apparently disliked most, for only one competitor named five out of the first six, and in this case the maligned Dahlia was omitted. The prize-winning list read, Petunia, Calceolaria, Aster, Geranium, Marigold, Sunflower.

History of the Tomato.—In *Die Gartenwelt* for October 21 is a short article giving the chief dates in the history of the Tomato from its first introduction into Europe. It is suggested that the plant was introduced to Italy about 1560 by an Italian botanist named Anguillara, and first described by a Swiss naturalist, Conrad Gessner, in 1561. Apparently the plant came by way of Spain and Portugal from America; Anguillara speaks of it as Pomil del Peru, while another current name for it was American Tumatle, or Mexican Tumatle, and yet another, Pomum Indum. Gessner gives some information about its cultivation, and cites growers of the ornamental plant (though it must then have been very scarce) in Nürnberg, Breslau, Torgau and Antwerp. After this, the Tomato seems to have spread quickly, and it was illustrated in 1850 in a herbal. One writer, Harder, called the plant "Portuguese Nightshade," a useful indication of the probable route of its introduction from the new world. In an old "Kreuterbuch" dated 1588, the statement is made that these "Apples" had now become common in the garden, and that in "Welschland" they were eaten with pepper, oil and vinegar. They appear to have been sometimes used as a specific, but right up to the beginning of the nineteenth century the general belief prevailed that they were poisonous.

Dr. Hill's Botanical Tour.—Dr. A. W. Hill, Director of the Royal Botanic Gardens, Kew, has started on a tour to Australia, New Zealand, Singapore and the Federated Malay States, and it is expected that the tour will last for five or six months. The visit to Australia is at the invitation of the Commonwealth Council for Industrial and Scientific Research, and we understand that the expenses incurred will be met by a grant made by the Empire Marketing Board. Dr. Hill will inspect the various research institutes, make a general study of the flora of the several countries he is to visit, and investigate and report upon the agricultural and forestry resources and the botanical institutions in each country.

Great International Horticultural Exhibition at Antwerp, 1930.—We learn that the Royal Agricultural and Horticultural Society of Antwerp is to organise at Antwerp on the occasion of the Centenary of Belgian Independence, a great International Horticultural Exhibition. The Society has associated with the Royal Horticultural and Botanic Society of Ghent, and with the Royal Horticultural Society of Brussels so as to obtain the support of these two powerful associations. These negotiations have resulted in perfect agreement, and Antwerp anticipates the valuable co-operation of Ghent and Brussels horticulturists, who have agreed to forego horticultural exhibitions of their own at the same time, except for a purely local Rose show in Ghent, which will be held in July, 1930, under the auspices of l'Avenir Horticole and Les Amis de la Rose. The Society is also negotiating with the Executive Committee of the International Maritime, Colonial and Flemish Art Exhibition, with the object of holding the International Horticultural Exhibition in the halls and gardens of the World's Fair. Antwerp will thus have in 1930 a horticultural exhibition which its promoters will make every effort to render worthy of the great fêtes which will take place in connection with the celebration of the centenary. If an agreement can be arrived at with the International Maritime and Art Exhibition, the splendour of the temporary horticultural exhibitions and the interest of the horticultural congresses will add greatly to the attractions of the World's Fair.

Bequests to Gardeners.—The late Mr. Ernest G. Mocatta, of Woburn Place, Addlestone, who died on October 1, and left estate valued at £352,996, bequeathed £100 to Mr. W. Holden, his gardener, and £250 to Mr. T. Stevenson, his former gardener.

Coventry's Noted Mulberry Tree.—We learn from the daily press that the fine old Mulberry tree at Coventry was blown down by the destructive storm which raged over the country last week-end. This Mulberry tree was reputed to be over five hundred years old and to have given shade under its ample branches to the monks of the old Coventry Priory. When that part of the monastery grounds in which the tree stood was sold to the Coventry Constitutional Club it was expressly stipulated that the tree should be neither destroyed nor removed.

Coburg Rose Show in 1929.—On the occasion of the opening of the autumn exhibition in Coburg, Germany, it was announced that the local gardening association would be celebrating its centenary in 1929, and that in that year, to mark the occasion, the German Rose Show would take place in the town. As, in the same season, the exhibition of the German Dahlia Society will also be held in Coburg, the town will have an excellent opportunity of making the year a festive one, as numbers of visitors will be attracted thither by the double event.

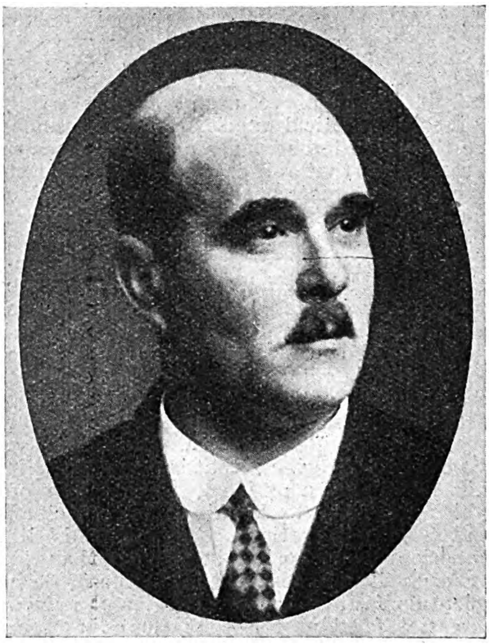
Lectures at the East Anglian Institute of Agriculture.—A programme of weekly lectures has been arranged by the Essex Agricultural Committee, to be given at the East Anglian Institute of Agriculture, Chelmsford, during the session 1927-28. Although many of the lectures are of purely agricultural interest, there are others of special interest to gardeners and market gardeners, notably those on "The Cultivation of the Potato," by Mr. J. C. Wallace, Principal, Agricultural Institute, Kirton, near Boston, on November 7; "Soil Cultivation," by Mr. J. R. Bond, County Agricultural Organiser for Derbyshire, on November 28; "The Growing of Black Currants," by Mr. R. G. Hatton, Director of the East Malling Horticultural and Research Station, Kent, on December 9; "The Cultivation of the Cricket-Bat Willow," by Mr. W. R. Day, Imperial Forestry Institute, Oxford, on February 6; and "The Cultivation of the Tomato," by Dr. W. F. Bewley, Director of the Horticultural Experiment and Research Station, Cheshunt, on February 24.

Legacy for the Royal Gardeners' Orphan Fund.—The Trustees of this national gardening charity have received a legacy of £50 from the executors of the late Mr. Thomas Manning, who died at Putney last June. As many of our older readers will remember, the late Mr. Manning was for many years manager to Messrs. James Veitch and Sons, at Chelsea, and a regular supporter of both gardening charities, and for many years an auditor of the Gardeners' Royal Benevolent Institution. We recorded Mr. Manning's death, in his ninety-fifth year, in *The Gardeners' Chronicle* of June 11, 1926.

Increased Exhibits of Cider and Perry.—It would appear that more attention is being paid to the making of cider and perry, for, at the forty-fourth annual show of the Brewers' and Allied Trades, which was opened at the Royal Agricultural Hall, Islington, last Saturday, there were two hundred-and-three exhibits of cider and perry—a great increase on last year.

Sandringham Gardens and Local Charities.—Our readers are probably aware that Their Majesties The King and Queen permit the Royal Gardens at Sandringham to be opened to the public on certain occasions at a small charge, the receipts being handed over to local charities. This year over £1,000 was received in sixpences from 42,000 people who visited the gardens, with the result that £500 has been sent to King's Lynn Hospital and £450 to Queen Alexandra's Memorial Fund.

Mr. G. F. Anderson.—The Earl of Balfour's Gardens at Whittingehame, Haddington, have been famous over a long period for the many interesting plants they contain, but their fame has been enhanced as a result of the skilful cultivation of Mr. G. F. Anderson, who has been in charge for about seventeen years. During this period Mr. Anderson has carried out many alterations and improvements at Whittingehame, and he has also been a very successful exhibitor of Grapes and other choice fruits, as well as flowers, at Edinburgh, Glasgow and Southport. In 1923 he won the *Glasgow Herald* trophy, offered for the best table of dessert fruits, and he has also won the Thomson Challenge Trophy for Grapes on two occasions at Edinburgh. On the occasion of the International Horticultural Exhibition held at Edinburgh in 1923, Mr. Anderson was awarded the Veitch Memorial Medal for twenty-four dishes of fruits, and the Hogg Medal for an exhibit of Apples. It was under his father that he had his first lessons in gardening, at Kings Meadows, Peebles, where he remained for four years. He gained further experience at Morton Hall, Liberton; Hirsel Gardens, Coldstream; and at Mauldslie Castle, Carluke. Entering the latter establishment as journeyman, he soon became foreman, and remained there for five years, when he was appointed to the position he now holds.



MR. G. F. ANDERSON.

Forthcoming German Horticultural Exhibitions.—For the year 1929, the town of Essen is planning a great horticultural exhibition to include all the Ruhr, and to make a fitting successor to the two great shows held in 1926 and 1927, in Dresden and Liegnitz, respectively. This exhibition, covering an area like the Ruhr, which is of so overwhelmingly industrial a character, will be of particular interest, as showing that even in a highly industrialised district the love of gardening and horticulture can be kept not only alive, but flourishing. The arrangements are chiefly in the hands of the Essen Parks Superintendent, Rudolf Korte; he will be assisted in the garden design and architectural details by Inspector Johannes Gabriel, who performed the same task for the Dresden Exhibition in 1926. Weimar is to have a great exhibition in 1928, to celebrate more than one anniversary; in 1828, the Grand Duke Karl August died, and the gardening association in Weimar was founded, while in 1728 the Bellevedere Schloss was built, and it is there that the exhibition, which is to include all Thüringia, is to be held. The show will consist of a permanent exhibition, to last from the beginning of July to the middle of September, of garden designs, pictures, photographs, etc., illustrative of Thüringian gardening and horticulture, also of plants and flowers in the grounds. Seasonal exhibitions will follow one another, beginning with Roses and ending with Dahlias, while after the closing of the main show, a further one of fruit will be held in October, arranged by the Thüringian Agricultural Society.

Dyckia sulphurea at the Royal Botanic Society's Gardens.—Good specimens of Dyckia sulphurea are now in flower on the mound of Cacti and Succulents in the Royal Botanic Society's conservatory at Regent's Park. During flowering, some of the leaves assume a vivid scarlet colour, which attracts attention to the pretty sulphur and pale blue inflorescences in the centre of the plant. D. sulphurea thrives well on a dry rock-work under glass, where its roots may run between the crevices that carry away excessive moisture. Considerably over fifty plants of this Montevidean species were in bloom during August and September, and one group is now carrying over eighteen heads of bloom.

Art Gallery at Ken Wood.—We learn that under the will of the late Lord Iveagh, the mansion at Ken Wood, the Hampstead estate which has been left to the public as announced in our issue of October 22 (p. 320), is to be converted into a public art gallery, for which purpose Lord Iveagh has bequeathed over sixty valuable pictures by artists which include Gainsborough, Reynolds, Rembrandt, Romney, Franz Hals, Landseer, Pater, Van Dyck, Raeburn and Turner, and provided an endowment fund.

Harrogate Chrysanthemum Show.—Owing to the lateness of the season, the Committee of the Harrogate and District Horticultural Association has altered the date of its Chrysanthemum show, from November 9 to November 26.

Flowers and Fruits for the Lord Mayor and Lady Mayoress of London.—In maintenance of an old custom, the Master of the Gardeners' Company, Sir John Young, recently paid a visit to the Mansion House, for the purpose of presenting flowers and fruits to the Lord Mayor and Lady Mayoress. Orchids, Dahlias, Chrysanthemums and Roses were the flowers presented, and choice vegetables accompanied the fruits.

Experiment Stations in Holland.—It was just fifty years ago, in the year 1877, that the first Agricultural Experiment Station was established at Groningen, in Holland, and there are at the present day four of these stations: at Groningen, Hoorn, Wageningen and Maastricht. The Groningen Institute is chiefly concerned with experiments as to the chemical and physical nature of the soil; that at Hoorn is given over to research in dairy produce and cow-keeping. These institutions require an adequate staff, besides a small number of highly trained and skilled scientific workers, all of which costs money. The results of their researches, however, are so valuable to Dutch agriculture and horticulture as a whole that the money is well spent. At Hoorn, the experiments made in the scientific feeding of cattle have resulted in an immense saving to farmers all over the country. The Maastricht and Wageningen Institutes are more in the nature of control, or testing, stations, and deal with fertilisers, cattle-feed and seeds. The fertilisers are mostly dealt with at Maastricht, the feeding stuffs and seeds in two different buildings at Wageningen. This specialisation has the advantage of enabling the various operations to be performed in the most economical way, almost on factory lines. As showing the magnitude of the operations carried out, it may be mentioned that between June, 1926, and June, 1927, 1,362 kilogrammes of fertilisers were dealt with at Maastricht, at a cost, for personnel and material, of 117,034 guilders. As the fees paid, however, amounted to nearly 140,000 guilders, it will be seen that this particular series of experiments was rather more than self-supporting. The work at the feeding-stuffs testing establishment at Wageningen is divided into two departments, chemical and microscopic. The first is carried on very much as is the work at Maastricht, the second calling for a more specialised and highly skilled staff, which makes the expenses very heavy. The cost of the feeding stuffs department is 40,000 guilders per annum, but the advantages gained by the information made available to the Dutch farmers are so obvious that they scarcely need stressing. Similar conditions prevail in regard to the seed-testing department, but here not only the farmers benefit, but also the exporters of seeds to foreign countries. Naturally, the work carried on at these four research institutes has grown enormously during the fifty years they have been in existence, and has had to be more and more specialised and departmentalised. It is not possible to measure in terms of finance the benefits which have accrued to Dutch agriculture and horticulture in general from the aid rendered, but it is not difficult to imagine that they must be immense, and that the Institutes must have contributed in no small measure to the high position enjoyed by Holland among the agricultural and dairy-farming countries of the world.

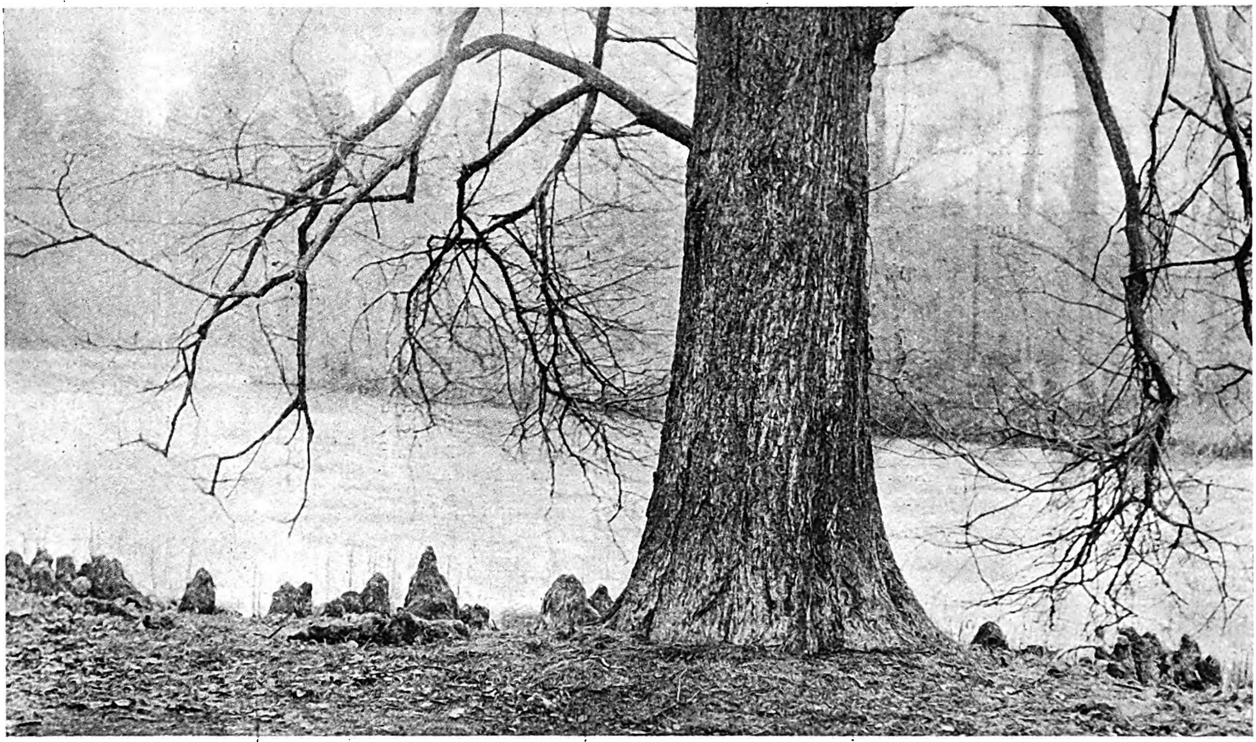


FIG. 160.—TAXODIUM DISTICHUM AT PAINS HILL.

(Showing "knees"; see p. 363).

Appointments for the Ensuing Week.—Sunday, November 6: Wakefield and North of England Tulip Society's meeting; Lyons Horticultural Exhibition and Fair (eight days). Monday, November 7: Harrogate and District Horticultural Association's meeting; Romsey Gardeners' Association's meeting; Birmingham Gardeners' Mutual Improvement Association's lecture. Tuesday, November 8: Jersey Gardeners' Society's meeting. Wednesday, November 9: Gloucestershire Root, Fruit and Grain Society's show; Oxfordshire Horticultural Society's show (two days); Wimbledon Gardeners' Society's show; Marlow Chrysanthemum Society's show; Kingston and Surbiton Chrysanthemum Society's show; Lancaster Horticultural Association's show. Thursday, November 10: Hitchin Chrysanthemum Society's show; Ipswich Gardeners' Association's show; Jersey Gardeners' Society's show; Nottingham and Notts. Chrysanthemum Society's show (three days); Sheffield Chrysanthemum Society's show (three days); Bridport and District Chrysanthemum Society's show; London Gardens Guild lecture. Friday, November 11: Blackburn and District Horticultural Society's show (two days); Whitley Bay Chrysanthemum Society's show (two days); Leeds Paxton Society's show (two days); Royal Horticultural Society of Ireland meeting. Saturday, November 12: Burton-on-Trent and Shobnall Chrysanthemum Society's show; Leigh-on-Sea Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Education of Gardeners.*—Being more in the habit, by the humble routine of my professional duties, of assisting others to publish their opinions in your columns, than to give "print" to my own, I must admit that I feel a great degree of diffidence in thus coming forward to ask your advice, and also to give my own practical experience upon the correctness of a paragraph which appears in your work, at p. 597, headed "Gardeners," wherein your correspondent "Beta" asserts, that "from information statistically and otherwise carefully collected, it is found that, as a body, gardeners are masters of more knowledge generally, and have received a better education, than most other professional classes of persons." Now, I am under the impression that if "Beta" had called upon me to assist him in collecting his "statistical" information, he would have somewhat modified his assertion; for, although I have no personal knowledge of gardeners as a class, still I consider that I am enabled to form an opinion as to the correctness and general applicability of "Beta's" remarks, from many things which come under my notice, as bearing upon the question, viz., "their having received a better education than most other professional classes of persons." I do not touch upon their "knowledge," because this is often, in a "professional" sense, found to exist in very great proportions where "education" is sadly deficient. Far be it from my intentions to dispute the assertion that gardeners are an educated class of persons; but I wish to ask you how far the term "gardener" may be carried in its real sense and meaning. All the world knows that Sir Joseph Paxton is a gardener; and not one would be presumptuous enough to challenge his "knowledge" or "education"; and in the small circle of my humble experience I may mention the names of such men as Mr. Fleming, Mr. Spencer, Mr. Fortune, Mr. Thompson, Mr. Glendinning, Mr. Cuthill, Mr. Ayres and a host of others, if necessary, to identify the same talented class; but I wish to know if, in the wide application of the term "gardener," I am to include all those jobbers at nurseries who publish their claims to the title on an ill-painted, and often ill-spelled, sign-board; which, suspended over their door, announces the fact that by them "gardens are lade out and kept in order by the day, month or year.—N.B. Carpets carefully beat, and porter's work done here." Because if these men are recognised as "gardeners," then do I dispute "Beta's" remarks altogether; for if I may judge by the penmanship and orthography of some of these "gardeners" when advertising for situations, I should say, that they were utter strangers to both "knowledge" and "education." To illustrate my case, may I lay a verbatim specimen before you, as it appeared from the "author's" own hand, before its correction by your humble servant. This specimen will give you a very fair idea of the class to which I allude. "As Gardener.—A highley respectabel marred man with one child 22 years of age who perfectly understands every branch of his profession. N.B.—Wife can look to dayrey and is of sober and industrus habets. Direct, etc., etc." By this you will perceive that the situation is required for "the child 22 years of age who perfectly under stands every branch of his profession," that "the wife is of sober and industrus habets," whilst not one word is said about the "highley respectabel marred man." In conclusion, I cannot confine my critical observations to the humble journeyman gardener, seeking a situation; for very many of the lists of choice plants, grown and furnished by respectable nurserymen, require much correction before they can appear in print as advertisements; to say nothing of the seedsmen's lists, which describe the names of articles they have to dispose of in the most outlandish and un-botanical style! *The Printers' Devil. Gard. Chron., November* 6, 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Dendrobium.—The deciduous section of this genus includes many plants which flower during the winter months. Such plants have completed their season's growth when the apical leaves of the pseudo-bulbs are fully developed; after this they need much drier and lighter conditions. Place them where they receive all the light possible, reducing the temperature gradually to a minimum of about 55° to 58°, and provide a drier atmosphere. The successful flowering of these Dendrobiums depends entirely on the proper resting and the consolidation of the growths, therefore every possible means should be taken to attain this end. Resting, does not mean the withholding of water, and leaving the plant to its own resources; as much skill is needed in resting a plant satisfactorily as there is in the production of growth, and even the best of growth will not produce the best flowers unless it is ripened satisfactorily. Backward plants, and those that have started to develop a secondary growth should be given every encouragement to complete their growth at the earliest possible date, and no attempt should be made to flower them.

Tall-growing Species.—D. Brymerianum, D. Dalhousieanum, D. fimbriatum, D. moschatum, and some of the hybrids of this section are usually late in completing their growths, therefore they should receive liberal treatment for the present. These evergreen species, with D. densiflorum, D. Farmeri and D. thyrsiflorum, should be grown in the warmest division at all seasons. During the winter, when the temperature is lower, and the plants are at rest, infrequent waterings will suffice to keep the pseudo-bulbs plump and the roots healthy. Excessively dry conditions are as harmful as keeping the plants and the atmospheric conditions too moist, therefore great care is necessary to bring these plants successfully through the winter.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Seakale.—Where this very useful vegetable has been grown as advised, the plants will have fully developed, and for an early start a few of the strongest and best ripened crowns should be lifted carefully and left in the open for a short time in order to give them that check which enables them to start into growth much more freely when they are taken into the forcing house. Exposure is beneficial to the crowns but not to the roots. After the necessary check has been given, the thongs should be trimmed from the crowns and the latter placed in beds in the forcing house. For this early start a small quantity of fermenting material should be placed in the bins or beds to generate a little bottom heat, and on this the soil should be laid. Plant the crowns about three inches apart. If the soil is moist no water need be given for a few days, but the crowns should be sprayed daily with warm water. Maintain a temperature of about 55°, never allow the roots to suffer from the want of water, and succulent stems will soon appear.

Trenching.—Before commencing this important work, a rough plan should be made to show where the various crops will be planted or sown next season. For instance, where Onions, Peas, Beans, Cauliflowers and Potatos are to be grown manure will be required, but all tap-rooted vegetables should be grown on ground manured for a previous crop. At least one-third of the garden should be trenched or double-dug. If the subsoil is poor it may be brought into good condition by bastard trenching for a season or two, deeply digging the bottom spit and (if it is heavy) mixing with it all the sharp, gritty material possible, such as road scrapings, refuse from the garden fire, lime rubble, etc. Treated in this way, the whole may soon be brought into good condition. Deep digging is of the utmost importance where really first-class crops are expected, as it not only allows roots to enter more deeply into the ground, but enables the crops to resist drought during hot, dry weather; moreover, it allows surplus water to drain away more quickly, especially during the early season, and therefore the soil becomes warmer. Leave the soil surface as rough as possible; where the land is heavy, I recommend ridging.

Draining.—In a very wet season the need for drainage is obvious, therefore, where this operation is necessary no time should be lost in providing means for getting waterlogged soils into a better condition, as nothing will flourish in stagnant ground. The best method is the use of ordinary field drains. Commence at the lowest end of the plot, and lay the pipes so as to form channels to carry off superfluous water.

Outside Root Crops.—All root crops should now be lifted and stored in sand in the root house, with the exception of Parsnips and Jerusalem Artichokes which should be allowed to remain until the New Year.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Figs.—Success in the cultivation of Figs is only assured when the roots of the trees are restricted. All strong, sappy growths should be removed now, retaining only a moderate number of the best short and well-ripened growths. In favoured districts Figs are a success as bush trees, when planted sufficiently far apart to allow air and light to circulate freely amongst the branches. Where the climate is less favourable, Fig trees need wall protection, a south aspect being the best position for ripening the wood and fruits. When preparing a new border, the soil should consist of turfy loam, old broken bricks, lime rubble, burnt earth and some chalk, thoroughly mixed; at planting time the compost should be well rammed as this assists in the production of short-jointed, fruit-bearing wood. Planting may be done now, but as the plants are mostly grown in pots the roots should be thoroughly disentangled and spread out evenly. Brown Turkey is still one of the very best varieties.

Fruit Trees in the Kitchen Garden.—Where fruit trees are growing close to the vegetable quarters, their roots often enter a loose, rich soil, with the result that coarse, sappy growth is made. Such trees should be checked annually by digging a trench at a reasonable distance from the stems, lifting the roots so exposed and replanting them; when carrying out this operation do not prune the roots too severely, especially if the trees are large, but see that damaged ends are cut clean and the soil is made firm about them.

Pears.—All late Pears should be gathered and stored. Keep the sound fruits by themselves, and use damaged specimens for stewing, etc., before further decay sets in. Stored fruits should be examined frequently. Keep the atmosphere of the fruit room sweet.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Bulbous Plants.—Even where Hippeastrums were started into growth during late spring they should have completed their growth and will no longer require water at the roots. To ensure a thorough ripening of the bulbs they should be stood near the roof-glass, where they will be fully exposed to light and all available sunshine. The house in which they are stored should be kept airy and cool. Tubers of Begonias may be stored under the stages in a cool house, placing each pot on its side so that the tubers are free from drip. Achimenes may be treated likewise, but should be wintered in a warm house.

Perpetual-flowering Carnations.—To secure an early batch of these ever-popular plants a good batch of cuttings should be inserted now. When choosing the cuttings select only those from healthy plants, otherwise the stock will be found to deteriorate. Certain growers insert the cuttings in clean sand, but I prefer a mixture of loam and sand, in which they will be found to root freely. Fill some small receptacles and dibble several cuttings in firmly near the edge of the pot; follow with a thorough watering, and afterwards place the pots or pans in a propagating frame, or in an ordinary box covered with glass. Some such protection is necessary to maintain an even humidity and induce quick rooting; if the cuttings are allowed to wilt or become dry it is almost impossible to obtain a successful "strike." Afford shade from the direct rays of the sun, and keep the temperature as near 55° as possible.

Sweet Peas.—The Sweet Pea is valuable for growing in pots for providing cut flowers during the early spring. Seeds should be sown now, placing three seeds in each three-inch pot filled with a somewhat sandy loam, and well-drained. It is preferable to germinate the seeds in gentle warmth, but immediately the seedlings appear through the surface they should be removed to a position near the roof-glass in a light, airy house, whence frost is only just excluded. When the young growths are about four inches high pinch out the tips; this will cause side-shoots to develop, and of these only two should be retained. Early in the New Year, when the days are lengthening, the plants should be moved into six-inch pots and, finally, transferred to those ten inches or twelve inches in diameter. The compost for the final potting should be enriched with a little decayed manure. Careful watering is necessary during the winter months, and a high temperature must not be permitted.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Cucumbers.—Plants now in full bearing will require liberal feeding and good top-dressing, little and often, to keep them healthy and prolific. If the bottom heat is obtained from fermenting materials and hot-water pipes combined, and the drainage is good, Cucumber plants will enjoy more feeding at this season than many growers imagine, but the liquid manure must be weak and varied and 10° warmer than the bed. The material for top-dressing can hardly be too rough and, with a little rubble and charcoal added, should always be kept in a warm, dry corner ready for use. Keep the house clean and admit a constant supply of fresh air. Sulphur in any form will prevent the spread of mildew. Direct syringing having been discontinued, atmospheric moisture and a brisk bottom heat must be secured by renovation of fermenting material and damping available spaces. Avoid the slightest check by carefully dealing with laterals and old leaves; when the trellis is filled a leaf may be removed here and there, while space for the extension of the best laterals may be secured by pinching out weak growths.

Cherries.—The cool summer has been most favourable to trained trees under glass, especially where spider, earlier in the season, injured the leaves. The fullest amount of ventilation should be allowed, both night and day, but the best check to growth is shortening the roots. Watering will keep the roots sufficiently moist, but copious rains are far better, and where the roof lights can be removed, this should be done. Early trees in pots plunged in the open have had the benefit of cool nights, and provided the foliage is still hanging, the buds will now be safe. A mass of roots being essential to success, water should be given in sufficient quantity to prevent the soil becoming dry. If the pots are well covered the need for watering will not be frequent, but when moisture is given it should penetrate to the crooks.

Pot Figs.—Any trees that remain outside should now be stored where they may be kept safe from frost. When the storing of pot Fig trees is finished the house cannot be kept too cool, unless the weather is exceptionally severe, but the roots of the trees must never become dry, as drought at the roots favours bud-dropping.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Dahlias.—When damaged by frost, Dahlia growths should be cut down, leaving only enough stem to permit the labels to be attached before the tubers are stored. Labelling is very important, especially where there are large collections of Dahlias. Although a large collection is very interesting, there is no doubt that Dahlias are most effective when grown in large beds or masses of one sort. A few of the very best varieties for filling large beds are The Prince, crimson; Pink Pearl; Persis, coral-rose; Ladybird, rosy-salmon; Dazzle, scarlet; Electron, yellow and orange-scarlet; Brentwood Yellow; Barlow's Bedder, crimson-scarlet; Dawn, yellow-bronze, with scarlet base; Tangerine, light orange, with scarlet base; Crimson Flag; Our Annie, shrimp-pink, with yellow base; Dobbie's Bedder, pale yellow; K. A. Victoria, still the best white bedding Dahlia; Moorkop, crimson-scarlet; and Lemur, with purple foliage and single, scarlet flowers. Some of the Collerette varieties are also excellent for furnishing large beds. Among the dwarf Mignon varieties Coltness Gem, Abinger Gem, Dinkie, H. J. Jones and Peter Pan are all excellent for bedding purposes and may be relied on to make a good display; nearly all of these are ideal for furnishing a supply of cut flowers. A failing with many of our good Dahlias is the fact that they make little or no tuber—the fine variety Brentwood Yellow being a case in point—with the result that it is almost impossible to keep them over the winter when lifted; the only way to get over this difficulty is to grow a stock of pot roots the previous season.

Begonias.—Tuberous-rooted varieties lifted from the open and dried under cover, should be sorted over and stored away for the winter in a dry, frost-proof building.

Gladioli.—The corms should now be lifted, as many varieties are quickly affected by cold and damp; they should also be stored dry. Where large quantities of bulbous and tuberous-rooted plants are cultivated it is well worth while to construct a suitable bulb store. This need not be an expensive building; it should be well ventilated and some provision should be made for heating it. A structure of this kind may be used for storing more or less tender subjects during the winter, and for storing hardy bulbs, such as Hyacinths, Tulips and Narcissus, during the summer.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Antholyza.—Members of this genus of bulbous plants bear a striking resemblance to Montbretias and are well worth growing in any herbaceous border where the latter are found to do well. They provide a useful supply of flowers, either for cutting or, what is of more importance to many, in the borders, where variety is required during late autumn. They may be successfully grown in the milder districts without any protection save that provided by their own decaying foliage, which should be left intact till spring; but in colder parts of the country, they should receive additional protection by placing Bracken or strawy manure around the clumps, or they may be lifted when the foliage has partially ripened, and stored in any frost-proof building until February or March. Like the Montbretias, they are readily increased by dividing established clumps, and replanting in good soil in spring, but they do not spread like Montbretias. Antholyza paniculata is strong-growing, with erect and fairly broad foliage, above which the panicles of red flowers are well displayed during September and October, and easily reach a height of four feet under good cultivation. A. crocosmioides is a later kind, usually at its best at the end of October; it is also dwarfer than A. paniculata, grows about three feet high, and has large flowers of yellow and orange colouring.

Tubs and Vases.—Tubs and vases containing Fuchsias, Pelargoniums and other subjects used for the summer display should now be placed in a cool house from which frost is excluded; keep the soil rather dry during the dull, short days. Young, healthy plants may be retained for another season, but old or worn out plants should be thrown away and a batch of young stock grown on to take their place next season. Where a winter set of tubs containing Conifers and other hardy plants is used these should be placed in position immediately the others are removed. Fuchsias growing in pots should now be gradually dried off and stored for the winter, giving them only sufficient moisture to prevent shrivelling. Many Fuchsias may be successfully grown out-of-doors in mild districts, and although these may not reach the dimensions attained by F. macrostemma and its varieties, they form interesting and useful additions to any collection of late-flowering shrubs, and even if they are occasionally cut back by frost during winter, they survive for many years without any protection and grow away again in spring.

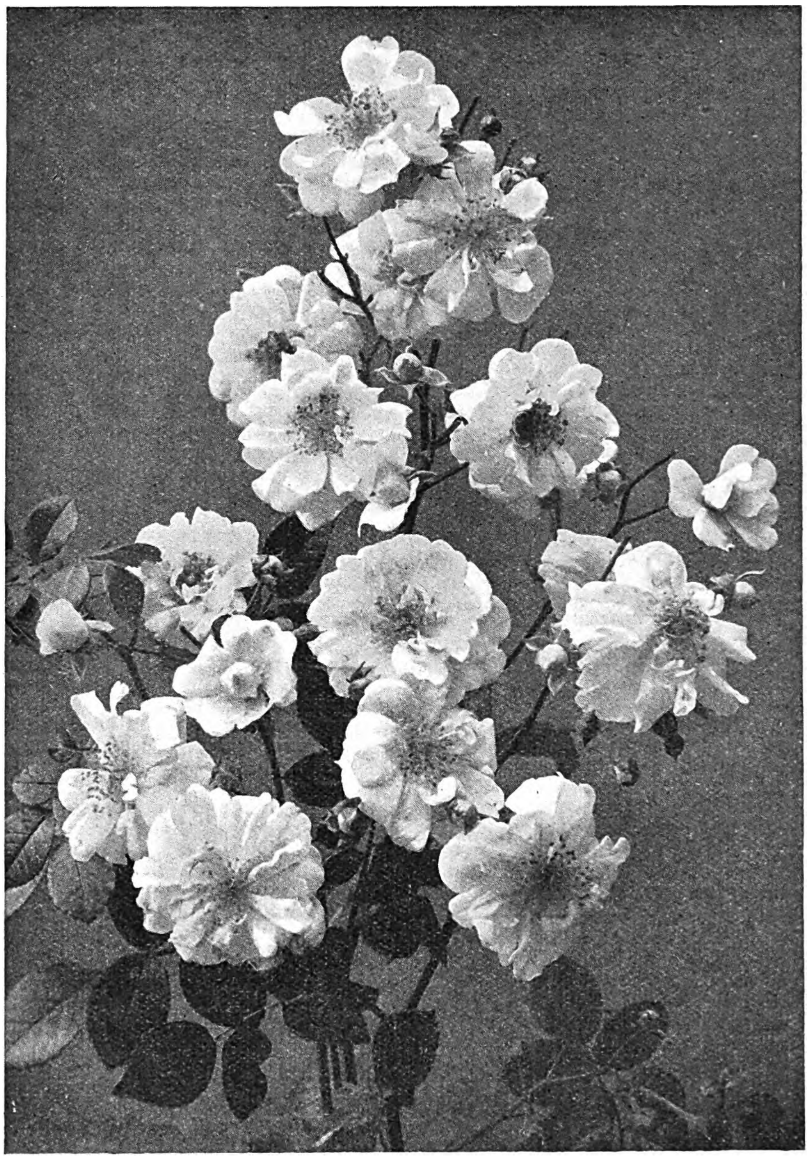


FIG. 161.—ROSE NANETTE.
(see p. 362).

Asparagus.—Asparagus growths are now sufficiently ripened to permit of their removal; cut them down to within six inches of the ground and, after removing all weeds, apply a liberal dressing of good manure to the beds. The method of growing Asparagus in single rows, from two-and-a-half to three feet apart, is a very convenient one, as the ground is more easily kept free from weeds by hoeing, and when cutting ceases in June the growths are easily secured to stakes and wires arranged for this purpose. The application of manure is also carried out more conveniently, as it may be laid along both sides of the rows—after drawing back the soil—and covered up, leaving a ridge which protects the crowns and sheds heavy rains. All weeds of a perennial nature must be carefully forked out, as it is only by persistent efforts that they can be kept in subjection.

Planting.—Where the preparation of the sites is made in advance, as previously advised, the planting of Roses and fruit trees or bushes may be expeditiously carried out so soon as they arrive from the nursery, provided the ground is in good working order. The roots of all plants which have travelled some distance should be examined and, if dry, immersed in water, first trimming any bruised or broken rootlets.

INDOOR PLANTS.

DATURA CHLORANTHA, HOOK.

THIS handsome plant is the hardiest of the genus. It will continue to grow and flower in a low temperature, when D. sanguinea (reputedly the most hardy) is showing signs of distress. That is one reason why it is an ideal plant for a corridor, winter garden, or conservatory where frost is barely excluded. Since it is a gross feeder, it succeeds best when grown in a large tub, or planted out, and under such conditions it will make a stem six or eight feet in height and stout in proportion. When well-grown, the plant branches freely and forms an umbrella-like head, and the leaves, previously so much as nine inches in length and six inches in width, become smaller.

The pendent, trumpet-shaped flowers are borne in the axils of the leaves towards the points of the branchlets, and are nine inches long. The corolla has five points, gracefully recurved, and as it emerges from the green, sheath-like calyx it somewhat resembles it in colour, but when developed is of a beautiful soft, lemon-yellow shade.

This Datura is easily propagated from cuttings taken in August and placed in a temperature of 50° to 60°. When potted, the plants should be grown on rapidly, hardened off towards the end of April, and planted outside. Secure them to stout stakes and disbud occasionally until a standard has been formed, so that the branches and flowers are carried well above the line of sight, where they are seen to greater advantage. Once this has been accomplished the roots may be cut round in October, and the plants lifted later, either to be planted indoors in permanent positions, or housed during winter and used as specimens in tubs or large beds in the summer flower garden. Grown in either way, the striking appearance of Datura chlorantha will win admirers at once.

Some idea of its charms may be obtained by referring to the *Revue Horticole*, 1908, p. 392, or to the *Bot. Mag.*, 5,128, where the double form is depicted. *J. Comber.*

BEGONIA COCCINEA.

THERE are few plants which produce such an abundance of blossom as this species of Begonia; indeed, it may safely be regarded as perpetual-flowering, for at no time of the year is it entirely devoid of flowers. For covering the back wall of a conservatory, for draping a pillar, or for cultivation as a pot plant, it is equally useful. The flowers are produced in large, loose, pendant cymes, and are of a bright, scarlet-pink shade; the peduncles are also deeply tinted with the same colour. The large, smooth, shiny, green leaves are also attractive, and as they seem immune to insect and fungous pests they always keep remarkably clean.

If it is desired to grow the plant against a wall, or a pillar, it will be necessary to take out a cubic yard of the old soil, and replace it with good loam and leaf-mould, and to provide drainage at the bottom of the hole. After the soil has been allowed to settle, the young plant may be put in, and no further attention will be required, beyond tying in the shoots as they develop.

Growth will be rather slow at first, but so soon as new shoots spring from the base a remarkable development will take place. Three years ago I inserted a cutting of Begonia coccinea; the plant has now made two shoots, each of which is over twelve feet in length. In other words, they have reached the roof, and I have had to bend them laterally to give them room.

When a batch of plants is desired for the greenhouse stage, it will be necessary to select basal shoots for propagation. These will root readily at any time of the year in a bottom-heated propagating case. The resulting plants should be grown on in seven-inch pots, and by careful staking and liberal feeding with a complete fertiliser, bushy specimens about three feet in height will be obtained quickly. *G. F. Gardiner, Bristol Botanic Gardens.*

HARDY CYCLAMENS.

ALTHOUGH the hardy Cyclamens are very attractive and many of them flower at a time of the year when they are especially welcome, they do not appear to be so largely grown as their beauty and usefulness warrant. By making use of species that flower in spring and autumn, their attractiveness may be displayed over a considerable period of the year, and even when the flowers are over the marbled foliage which characterises some of the species is distinctly ornamental.

Hardy Cyclamens appear to thrive best in partial shade and prefer a gritty soil well supplied with humus. An essential factor is thorough drainage, and when the plants are established they should be left undisturbed, as they dislike being moved. They like lime, and when soil is being prepared for them a liberal amount of broken stone and mortar-rubble should be added to it.

C. coum is a spring-flowering species, its small, deep-red flowers appearing in February and March, contemporary with the leaves. C. ibericum also flowers in early spring, its bright rose-coloured flowers being rather larger than those of C. coum, but its season is about the same. C. repandum blooms somewhat later, its bright red flowers appearing from March until May. C. neapolitanum is a valuable autumn-flowering species, producing its dainty rose-pink flowers in abundance from August onwards; these are followed in October by the leaves, which are bright green with a handsome silver zone. There is also a white variety which is equally floriferous. C. europaeum, also an autumn-flowering variety, has bright red, sweetly-scented flowers, produced from August until October, contemporary with its beautifully marbled leaves. *A. P. C.*

BULB GARDEN.

TRICYRTIS.

MANY growers of hardy flowers have favourites which owe their attractions to a certain quaintness rather than to their beauty. Of such the Tricyrtis always appears to the writer as one. Long years ago my desire to know all hardy flowers well induced me to purchase two of the Tricyrtises, popularly known as Toad Lilies. Tricyrtis hirta was the first to enter my garden, but it seemed to resent our cool summers and tarried so long that frost destroyed the blooms before they could open. Next, T. macropoda was the object of desire and, as it is earlier, it did not fail to bloom before autumn had grown cold and dull. Once, in a hot summer, I think, T. hirta deigned to bloom, but it was T. macropoda which was the stand-by of the race.

It is not possible to wax enthusiastic about these Toad Lilies. They are quaint things, formed after the fashion of a Lily, with wax-like blooms of dull pink, spotted and dotted with dull purple. They derive their interest from their singularity. They are not common in commerce—which one might well expect from their ineffectiveness. They should have a warm border and dryish soil. I cannot recommend them, except to those who appreciate the uncommon as distinct from the beautiful. *S. Arnott.*

PANCRATIUMS.

THE reference on page 319, together with the plant illustrated in the supplement accompanying your issue of October 22, proves what a delightful and desirable bulbous plant is Pancratium illyricum. This species appears to have been in cultivation for upwards of three centuries. It may possibly be established in other gardens than those at Oxford, but I am inclined to believe that few obtain such fine results as Mr. W. G. Baker, the Curator.

During the early summer of 1919, I was shown a position where P. illyricum had been planted in good soil, at the base of a conservatory wall, in genial surroundings, where many tender and uncommon plants flourish. The owner of the garden is an enthusiastic and careful cultivator, but P. illyricum remained quiescent, and ultimately succumbed. Its habitat is not difficult of access, but whether it abounds plentifully on hill, valley, or the littoral I am unprepared to say.

P. maritimum grows wild on the Asiatic shore of the Mediterranean, in firm, moist, saline sand.

During July, 1918, I saw it growing abundantly in clumps and drifts and flowering profusely on the Palestine coast. I had ample opportunity for examining the plants as we were out of the fighting line for a few days, and engaged in the healthful duty of bathing ourselves and horses in the sea. There may have been other drifts further along the strand, but I was unable to explore beyond a few hundred yards each way from this colony. I assumed it to be P. maritimum, owing to its proximity to the sea, and verified it afterwards.

As is the case with other charming plants, in course of time they become acclimatised, and when their requirements are understood and provided, they attract notice, thus encouraging other growers to cultivate them. *Frederick Gooch, Bossington Gardens, Houghton, Stockbridge.*

ROSE GARDEN.

ROSE NANETTE.

COMPARATIVELY few of the Wichuraiana Roses have fragrant flowers, therefore the variety Nanette is a pleasing exception to the general rule, as its pure white semi-double flowers (Fig. 161, p. 361) are sweetly scented. Nanette is a graceful Rose suitable for covering garden pergolas and arches. The individual blooms are about two inches wide and in the fully open flowers the margins of the petals are prettily waved, while the central cluster of golden stamens adds greatly to the beauty of the elegant flower clusters and enhances the purity of the whiteness of the blooms. Rose Nanette was shown well by Mr. Elisha J. Hicks at the provincial exhibition of the National Rose Society, held at Bath in 1925, and on that occasion it received a Certificate of Merit.

AUTUMN ROSES.

THE genial weather at the beginning of October resulted in a very welcome crop of late Roses, and in many instances there were more flowers on the bushes throughout that month than there were during the summer.

That old patriarch, Gruss an Teplitz, produced more blooms at this period than at any time earlier in the year, and this was also the case with General MacArthur, which still remains one of the best garden Roses.

The Tea and Hybrid Tea Roses usually provide a certain number of flowers towards the end of the season, and this year the Hybrid Perpetuals have, to some extent, followed their example. Frau Karl Druschki and another white variety, Candeur Lyonnaise, have borne many exceptionally large and perfect blooms. Others of the same class which have been almost as good are Ulrich Brunner, General Jacqueminot, Hugh Dickson and Commandant Felix Faure. These last two varieties have been pegged down, which may have accounted for the number of late blooms, but I should always include them in my garden on account of their sweet scent.

Mrs. Herbert Stevens has carried numbers of long-pointed blooms of shaded fawn, and heads the list of the Tea section for autumn flowering, closely followed by Molly Sharman Crawford, Lady Roberts, and that fine "buttonhole Rose," Lady Hillingdon.

Caroline Testout is probably one of the finest Hybrid Tea Roses for general garden and park decoration, as it frequently flowers for three or four months, and its large, globular flowers make a splendid display. This year it has proved no exception to the general rule, and although many of the earlier blooms were spoilt by rain, the abundant crop of later flowers was ample recompense.

Other Roses which have given of their best to brighten the ever-shortening days of autumn are Independence Day, Golden Emblem, Ophelia and Madame Edouard Herriot. *R. K.*

TREES AND SHRUBS.

CLEMATIS REHDERIANA.

Considerable confusion has arisen over the name of this distinct and attractive Clematis, the muddle originating in the identification of it in the first instance as C. Buchaniana, and, later, as Clematis nutans, both of which species are natives of the Himalayas, while the plant in question comes from Western China. It was introduced to France in 1898, and brought to this country a few years later, while in 1908 it was also introduced by Mr. E. H. Wilson as C. nutans.

C. Rehderiana (Fig. 162) is quite hardy, very free both in growth and the production of blooms, and is a useful subject for garlanding trellises, walls of buildings, trees or ornamental hedges. It is a deciduous climber, producing angular growths, twenty feet or more in length, which are clothed with pinnate leaves from six inches to nine inches long, consisting of five or nine leaflets. These leaflets, which are sometimes three-lobed and have coarsely-toothed margins, are broadly-ovate, heart-shaped at the base and pointed at the apex. They are dark green and slightly downy on the upper surface, the lower surface being lighter in colour and covered with silky down.

The flowers of C. Rehderiana are produced from late August until the end of October, in erect, nodding panicles from four inches to nine inches long, arising from the leaf-axils on the current season's growths. They are bell-shaped and strongly fragrant with the scent of Cowslips; the four sepals are about half-an-inch in length, have recurved points, and are cream-coloured, tinted with green at the base, and clothed on the outer surface with silky down.

Clematis Rehderiana is still a rare plant, but it is well worth growing on account of the lateness and fragrance of the blooms and the freedom with which it grows. *A. G. F.*

TAXODIUM DISTICHUM.

This is by no means a common tree, and one that is only met with as mature specimens in gardens and grounds where former owners took an interest in planting this and other rare Conifers. The tree is of fine pyramidal habit, a beautiful subject in spring, with its soft green, feathery foliage, and again in autumn, when the foliage is of a rich reddish-brown colour.

Taxodium distichum is quite hardy in the south and midlands, and will grow and make good specimens even in fairly dry situations, although the ideal position for it is close to a stream or pond. Being a native of swampy districts of the United States, it is only when planted in such positions here that the true character of the tree is developed. In such situations woody, oval protuberances spring from the roots and are known as "Cypress knees." These projections are at times two feet high, and good examples of this curious feature are illustrated in Fig. 160, p. 359, which represents a tree growing by the pond side in the grounds at Pains Hill, near Cobham, where the position suits its admirably.

This and the noble specimens of Cedrus Libani and other fine trees to be seen at Pains Hill makes one grateful to those who had the foresight to plant for posterity. *R. F.*

PARROTIA PERSICA.

Considering this species was introduced so long ago as 1848, it is surprising that it has not been more generally planted for the sake of its beautiful autumn leaf colouring. During the second week of October a small tree, some twenty-five feet to thirty feet in height, was gorgeous in its autumn colouring of glowing crimson, orange, yellow and green. Where autumn colour is desired, this small tree should be planted either singly or in groups. *J. C.*

LIGUSTRUM QUIHOUI.

Although the Ligustrums as a group can hardly be considered as highly decorative shrubs, this Privet should by no means be neglected in a well ordered shrub garden or border. It is deciduous, and forms a rounded bush of rather loose habit, producing slender growths with gracefully arched branches, from five to ten feet in height, the young branches being light grey in colour. The glossy, dark green leaves are from one inch to two inches long, ovate or obovate, tapering at the base to a short stalk and usually rounded at the apex, the margins being slightly waved and entire. The plant is quite attractive in bloom, the white, fragrant flowers being produced in long, slender panicles during September and October.

Ligustrum Quihoui is a native of China, from which country it was introduced to France in 1862. *A. G. F.*

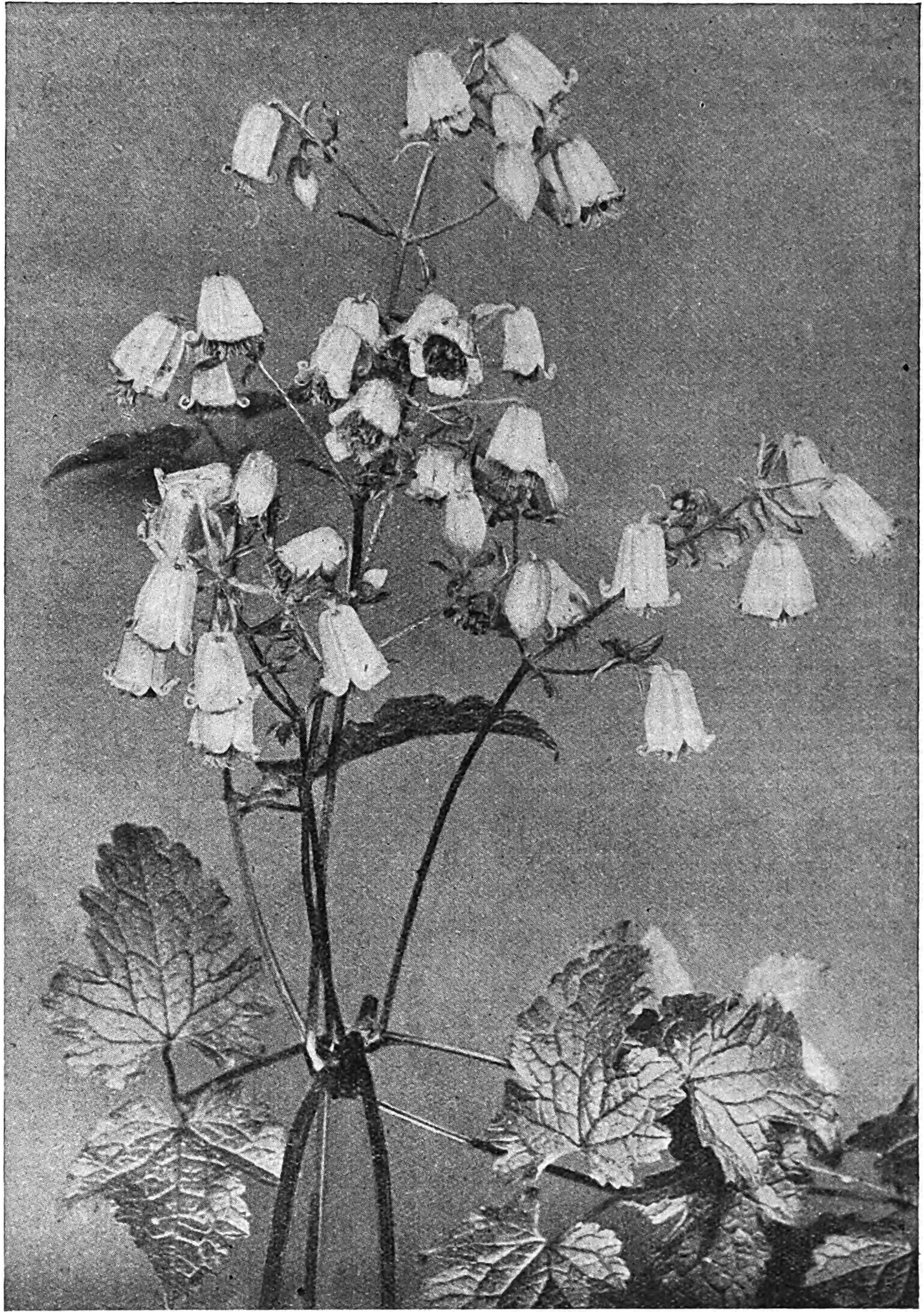


FIG. 162.—CLEMATIS REHDERIANA.

MELALEUCA HYPERICIFOLIA.

A few years ago a friend sent me some seeds of this plant, and as it was a stranger to me, the seeds were sown at once, and the resultant seedlings pricked out into small pots and eventually shifted into pots of larger size, as required; but as no sign of flowers appeared, several plants were planted out on a sheltered border about four years ago. They took kindly to their new quarters and soon developed into nice, bushy specimens with small, Hypericum-like foliage, which is doubly attractive because of the powerful Eucalyptus scent emitted when the leaves are bruised. Three years ago one plant was discovered bearing one of its pink-coloured, bottle-brush spikes, and that towards the end of October last year. A close watch has been kept this season, and a few days ago a number of developing spikelets were discovered along with one fairly well developed. Melaleuca hypericifolia is not a showy plant as the flowers are produced from two- or three-year-old wood, and are screened from observation by the younger growth and foliage, but its uncommon style of flowering makes it attractive to the collector of interesting plants, and it may well be that as the plants grow older the annual growths will not be so strong, and more and more flowers will be produced on the older wood.

In colder districts this native of Australia should receive the shelter of a wall, and in this position, with a judicious system of pruning its flowers might be better displayed; it would soon cover a fair space, as it grows rapidly in a young state, some of the plants here being nearly six feet high, and the small, evergreen, scented foliage is always attractive. *A. T. Harrison, Culzean Castle Gardens.*

ALPINE GARDEN.

EPILOBIUM OBCORDATUM.

A rock plant beloved by those who can give it a sunny ledge in light soil in a dryish part of our country, and which will bloom in August and September, has come to us from the Sierras of California. This is Epilobium obcordatum, one of the few really good alpine plants among the Willow Herbs, and, not only an attractive but a really showy plant when in bloom, and one which gives more than ordinary brightness to the rock garden in its season. Where it is happy, E. obcordatum forms a mass of trailing shoots, well clothed with leaves, which are rounded and of a delightful green, the shoots terminating in clusters of large and most pleasing flowers of a fine rose-pink. It is a plant which evidently detests our wet winters, but this is what we might expect of one from its native habitat, and I have lost it several times in wet seasons. Still, one does not like to be long without E. obcordatum, and I live in hope of finding for this Epilobium a more congenial home. A moraine or very stony slope might render it immune from the effects of our wet climate. It may be raised from seeds or increased by cuttings, and those who have such accommodation, may well keep a few young plants under glass to replace any which may be lost in the open.

GENTIANA FARRERI AND G. SINO-ORNATA.

Perhaps I may be allowed to endorse Sir Herbert Maxwell's remarks upon these fine Gentians in your issue of October 8. G. Farreri, in my last garden, in a soil of medium loam with gravel mixed with it, grew only moderately well, but flowered fairly satisfactorily. Here in a better soil of rather heavy loam, it does not appear at all happy, and has not flowered this year. On the contrary, G. sino-ornata is evidently happy in similar soil, though rather more flourishing in one place where the loam has been lightened by the addition of some sand. I look upon it as one of the finest additions to the genus for many years. Its late blooming is a valuable point; on October 14, it was still in full flower. The colour is magnificent, although varying slightly in plants raised from seeds, but so far I have not seen an inferior or disappointing one. I am growing both G. Farreri and G. sino-ornata on rock work, near the base, and where they receive the morning sun and some in the afternoon as well.

VIOLA DECLINATA.

Viola declinata is the name applied to a very pleasing little Violet, but it is asserted with a good show of authority behind it that V. Dubyana is its true title. It is not too frequently met with anywhere, and in few nurseries does it appear to be stocked. Possibly this is due to the reputation it has for being short-lived, and this is a factor not to be overlooked. In most gardens it appears to be found desirable to raise it from seeds annually, but this is not always easy for the gardener, amateur or professional, when there are so many things to attend to. Possibly, we give it too generous diet, as it is a native of stony places or limestone moraines. Probably a more meagre fare would lengthen its life. It is worthy of some attention to secure a prolongation of life, as it is an attractive little plant of branching habit and gives us, from early May, and sometimes even earlier, many of its lovely little purple blooms. If seeds are not procurable—and I do not think they are—plants may be secured in pots from some nurseries.

FUNKIA SIEBOLDIANA.

The late Mr. Peter Barr had a great admiration for the Funkias, or Plantain Lilies of Japan, and did a good deal to bring them into prominence, to the great benefit of British gardens. But the tide of popularity appears to have waned of late years, as shown by the fact that fewer varieties are offered by leading hardy plant nurserymen than there were even a few years ago. Possibly we had too many forms, but there is no doubt that the Funkias, as a whole, lend themselves to many phases of gardening, and individually are excellent plants. One of the best and most striking is Funkia Sieboldiana, a bold plant with exceedingly handsome, ribbed glaucous foliage and beautiful, silvery-lilac flowers on stems rising to a height of two feet or more. It blooms in July. The variety F. Sieboldiana major is a very handsome one and should be secured if possible in preference to the other. In large rock gardens this Plantain Lily has been employed with good effect. It is also a splendid border plant, and I have seen beds filled with this and margined with a smaller species, creating a good feature in gardens. By the waterside, F. Sieboldiana looks extremely well. It likes good soil, and is increased by division.

PRIMULA MEGASEAEFOLIA.

More than twenty years have passed since I first grew Primula megaseaefolia, which I was very pleased to have, but which proved a disappointing plant in most years, although the garden I had at that time was in a comparatively mild part of the country and close to the Solway. It is really a winter bloomer and, unless favoured by a mild climate and a kindly season, it looks unhappy, as its leaves seem to suffer from the cold. I grew it in quite a sheltered situation, in shade, and in a fairly moist part of the garden. It annually made an attempt to bloom but it was only in a few seasons that its bright, rose-magenta flowers managed to open well. It was appreciated when it did flower, as it helped to brighten up a corner in association with the Winter Aconite.

The name of P. megaseaefolia is an apt one because of the form and appearance of the leaves, which greatly resemble those of some of its smaller Saxifrages of the Megasea section. The true role of P. megaseaefolia is to be found by growing it in the alpine house, where its presence is most acceptable. It is a native of the Caucasus, where, I believe, it grows in shady ravines. *S. Arnott.*

FLORISTS' FLOWERS.

OLD BORDER CARNATIONS.

Despite vicissitudes and temporary lapses from grace, the border Carnation well maintains its place in the forefront of florists' flowers, and, indeed, in its later forms, as a decorative plant. It is ever interesting to delve into the early history of florists' flowers and observe the meticulous care with which they were grown, and the discrepancies between the cultural methods of to-day and yesterday. The same exactitude of perfection is not required to-day as during the first half of the nineteenth century, but every true gardener reveres the memory of the florists of those days. Their methodical and painstaking work has the foundation upon which has been reared the whole fabric of floriculture as we know it to-day.

In the *Transactions* of the Horticultural Society for 1833 is an article by a Mr. Wm. May, "On the Culture of the Carnation"; he recommends that in September the layers should be taken off the parent plants and potted "two in each forty-eight-sized pot" in a compost of half leaf-soil and half coarse pit sand approaching to grit. "When potted give a sufficient watering, and place them, exposed to the mid-day sun, in a frame filled with old tan so high that it will just admit the pot and plant to stand on the surface and not touch the glass." He advises that the frame be closed and shaded for a few days until the plants have recovered from potting; "then begin gradually to give air, and increase it till, in dry, warm weather, the lights may be entirely taken off; take care to close them down again before the evening dews fall, and preserve them at all times carefully from excess of wet, or mildew and canker will infest, if not destroy the plants." This mode of treatment is to be followed until November or December, "giving a little water to those that appear dry"; with the advent of severe weather the lights are to be completely closed, "but when the weather changes and days lengthen, give air as before, until the latter end of March, when, for a few days before finally removing, give full air night and day."

The remainder of the paper deals with potting, and it is recommended that the plants be placed singly in thirty-sized pots, using for the purpose a soil composed of three-fifths decomposed leaf-soil, one-fifth coarse sand or grit, one-fifth road scrapings from a limestone-made road, or the subsoil or paring next the stone used for lime; "these ingredients should be well mixed and exposed to the frosts of winter, and be frequently turned, at the same time carefully picking out all worms, wireworms, etc." After describing the actual operations of potting, the writer commends the following practise: "Plunge the pots in the ground where they are intended to bloom, the rim being just covered. Before plunging, lay a small portion of soot in the place where each pot is to stand; this prevents the entry of worms, etc. This method is preferable to growing the plants, either in large pots to stand on the surface, or in the open ground. In the season of layering, place an inch thick of fine, sandy soil round each pot, in this the layers will readily strike root."

During the sixties and seventies of last century the ideas obtaining to-day had, in some part, been adopted; thus the following method for preparing a border or bed was promulgated:—The bed must be ridged up in autumn for exposure to the sweetening effects of winter weather and the extermination of insects; at the same time, a dressing of soot and lime, mixed [this is, of course, worthless advice, as both would thus be rendered innocuous] is to be appled and, if the soil is at all clayey, an addition of leaf-soil and sharp sand is recommended. March was the favoured month for planting, allowing the plants one foot space each way; further remarks refer to the "feeding," disbudding, and supporting of the plants.

Favourite Carnations of 1848 were Appleby's Prince of Wales, Brabbin's Squire Meynell, Barnard's Duke of Roxburgh, Hales's Prince Albert, Turner's William Penn, Ely's Prince of Wales, Brooke's Flora's Garland, Strong's Duke of York, Ely's Jenny Lind, Haines's Scarlet Defiance, Holliday's Thomas Hewlett and Elliott's Brilliant. Picotees obtaining favour were Matthews's Juno, Kirtland's Pride of the Village, Barringer's Miss Turner, Staniland's Eliza, May's Juliet, Burroughs' Duke of Wellington and Burroughs' Lady Smith.

During the seventies and eighties of last century a good collection would include, amongst others, the following:—Dodwell's A. D. Southgate, Gibbons's James Taylor, Hewitt's E. S. Dodwell, Dodwell's Alfred Hudson, Dodwell's G. F. Wilson, Fletcher's Clipper, Dodwell's Vivid, Turner's Lady Rosebery, Lemoine's Gloire de Nancy, Abercrombie's King of the Yellows, Dodwell's Friar Tuck, Taylor's Mayor of Nottingham, Dodwell's Tom Brown, Hooper's Duke of Grafton, Ward's Sarah Payne, Fletcher's Eccentric Jack, Elliot's Earl Stamford, Easom's Admiral Curzon, Dodwell's Mrs. Barlow and Woods' Rifleman.

A few years later and Mr. James Douglas, Mr. Martin Smith and others, by careful selection, hybridisation and devotion to this fine old flower, laid the foundation of the present race of Border Carnations. Now, and in the future, the objective must be the real old Clove perfume allied to flowers of good form and plants of fine constitution such as we already possess in a fine series of Border Cloves.

It would be interesting to know how many of the old Carnations mentioned above are still in cultivation; it is probable that some may be found in the byways of Britain, in old-world cottage gardens, and I sincerely hope that the response to the recent appeal for old-fashioned florists' flowers made by the John Innes Institute will be generous. Many of these flowers—Carnations, Auriculas, Pinks, Polyanthus, etc., provided the recreation of the workers in the great industrial centres, and perhaps in or near the great towns of the north and midlands, and from the old-world cottage gardens some of these treasures may yet be found. *Ralph E. Arnold.*

HARDY FLOWER BORDER.

PHACELIA VISCIDA.

Although the value of this plant is well-known to many country bee-keepers, it is a blue-flowered annual that has not received so much attention, as a garden plant, as its relatives P. campanularia and P. Whitlavia. The last-named is perhaps better known under the name of Whitlavia grandiflora or W. gloxinioides.

Phacelia viscida (Fig. 163) is a native of Southern California, and has been in cultivation in this country for very many years—nearly one hundred. It grows from twelve to twenty-four inches high, and is a freely-branching plant, the bases of the stems being somewhat hairy, while the upper parts are glandular. The leaves vary from one to three inches in breadth, and are of ovate-cordate shape, with toothed margins. The colour of the flowers varies, and it may be rich, deep blue—as in the most desirable strains—or blue-purple with a whitish eye. Flowers are borne freely and are individually about an inch in diameter.

As Phacelia viscida—also known as Eutoca viscida and Eutoca viscosa—is raised quite easily, if seeds are sown in the open, in April, it is an annual of special service where blue flowers are needed in beds or borders. *C.*

HELLEBORUS NIGER.

The Christmas Rose, a native of Southern Europe, is noteworthy in having the largest flowers of any hardy plant that blooms early in the year. Introduced in 1596, and always a favourite, it has never attained the popularity of the Snowdrop, though both flower at the same season. Christmas Roses, although easily grown, are not always seen in good health, and no plant suffers more in appearance; the sparse, pale foliage, and short-stemmed flowers grovelling in the mud, are symptomatic of ill health. When well-grown, the flowers, protected by ample, green, leathery leaves, stand up boldly, on stalks six to nine inches in length, and, opening widely, display their dazzling whiteness, which gains by contrast with the pale green centre, and boss of lemon-coloured stamens.

Helleborus niger loves a rich, well cultivated soil, such as a plot that has been well manured for previous crops, and moist rather than dry. As to position, a border under a west or north-west wall suits it exactly; the addition of lime rubble is helpful; in fact, the finest plants I have ever seen were growing in stiff loam and chalk rubble, at the foot of the South Downs. In new ground, a sufficient depth of soil must be prepared by double digging, or, if the subsoil is very poor, removing part of it and substituting old hot-bed or well-decayed material from the refuse heap, working in half-a-wheelbarrow load of lime rubble to every four yards, and mixing the whole thoroughly before planting.

There was, at one time, considerable controversy as to the best season for dividing and replanting. The late Mr. E. H. Jenkins, a well-known herbaceous plant expert, contended that early autumn was alone suitable; others were equally sure that March and April were the best months. I have tried both seasons and should now adopt whichever suited my convenience. Hellebores seem to grow well under each condition, and may be multiplied by division at either season.

Hellebores will continue to grow and flower in the same station for many years, but are at their best during the third or fourth year. The clumps are then about twelve inches in diameter, and may be divided easily into quarters. Use two digging forks, setting them back to back in the middle, and prise the clump asunder. When planting, spread out the roots, and if the soil is stiff, a shovelful of fine soil around the roots will be beneficial; plant firmly. Unless seeds are required the flowers should be removed when faded; seeds ripen freely, and if sown so soon as ripe they germinate readily, but the flowers from seedlings are rarely better, and often not so good as the type.

Several named varieties have been placed on the market; H. n. var. altifolius is the best, as the blooms are very large, and beautifully flushed with rose. *J. Comber.*

CAMPANULA PUNCTATA.

A Campanula which ought to be borne in mind by purchasers of hardy flowers is the North Asian Campanula punctata, a species about a foot high when in bloom, which gives us much pleasure in summer. It has rather oval, heart-shaped leaves on long stalks, and above these rise the stems, bearing several large, pendent bells of a pretty creamy-white shade, dotted in the interior with red spots. It thus presents two aspects for admiration. The first when seen with its long, handsome, drooping bells in the border, and the second, when these bells are examined inside, when the red spots on the creamy-white ground are most attractive. It is of running habit, but is not too obtrusive in this respect. It should have a rather light and sandy soil, as in a heavier compost it does not succeed well, and may be lost in severe winters. Plants may be raised from seeds, or the runners may be removed with roots attached. It appears to prefer sun to shade, and flowers in summer. *A.*

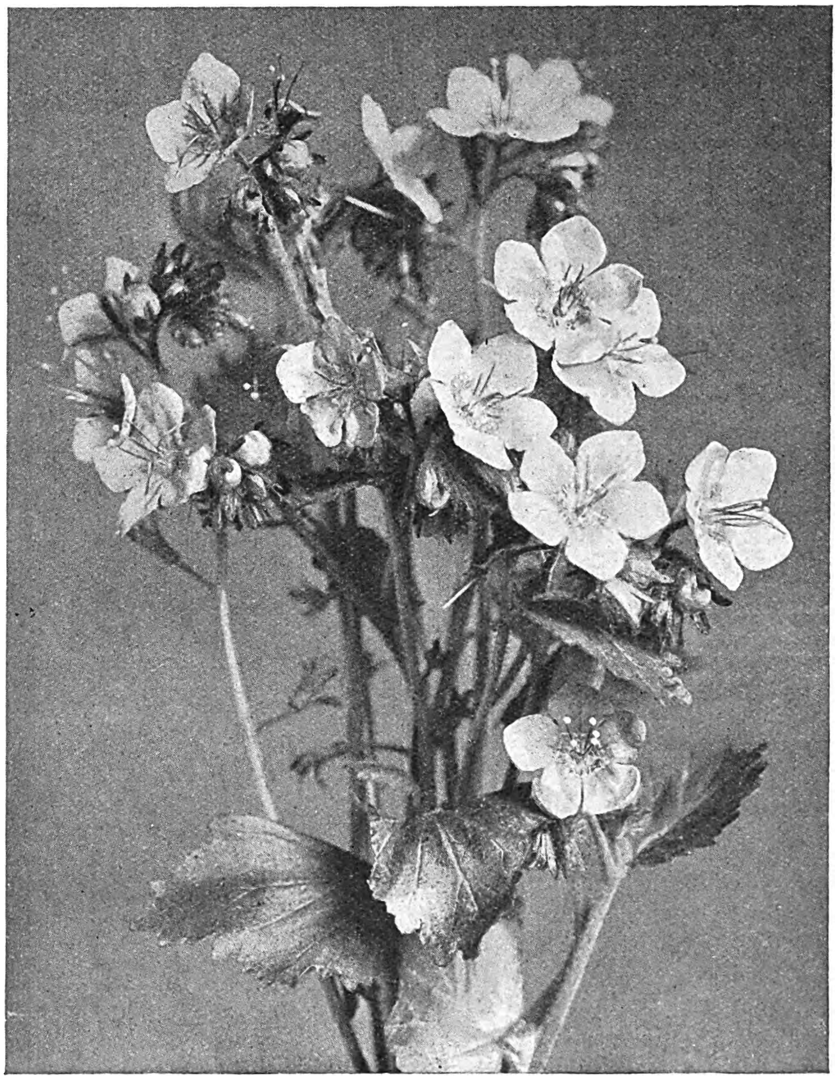


FIG. 163.—PHACELIA VISCIDA.

CNICUS HETEROPHYLLUS.

It is not often that Thistles are planted in private gardens, but it does happen, however, and C. eriophorus is the most frequently admired and grown. I recently noted the Melancholy Thistle, as Cnicus heterophyllus is called, in the garden of Miss Wright, Kayhough, Kew. The only fault she has to find is that the root creeps and may send up a stem in the middle of something else. I cannot imagine why it should have been called Melancholy Thistle, unless because it has only a solitary head on the stem, as a rule, though it may produce one to three small ones on short branches occasionally. The head is purple, the leaves cottony beneath, and the whole plant without spines. A Mr. Penny seems to have been the first to discover it in this country, on the Ingleborough Fells of Yorkshire. John Gerard found it only once on the south side of Highgate. Although found in more than half the counties and vice-counties of Britain, it is confined chiefly to the mountains of the north. *J. F.*

HELENIUM WYNDLEY.

The excellent review of the Heleniums by "R. F.," which appeared in *The Gardeners' Chronicle* of October 15 (pp. 304-5), leads me to pen a short note regarding a variety which I received from a Scottish nursery last spring, and which has flowered exceedingly well in one of my borders this autumn. It was named H. Wyndley, and may best be described as a form of H. pumilum magnificum of the same stature, but considerably deeper in colour than that valuable plant, and has flowers which, if anything, are larger than those of H. pumilum magnificum grown in the same border under precisely similar conditions. The colour is a rich orange, and the effect of a large plant is exceedingly fine. I have here practically a complete collection of the best of the named Heleniums, and of these I should place Wyndley in the first rank. I have been unable to trace the origin of H. Wyndley, and should be glad if any one could enlighten me. *S. Arnott.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XVIII.—We Retrace our Steps.

ARRIVED at my camp—which leaked like a sieve and stank of mould—I was met by a Lisu sent from Fort Hertz to my assistance. He brought my mail, with news of the general strike in England, and a bag of rupees, but no Rice; however, we procured a little food from the Tibetans. The men wanted to go straight down to the village next day, but I refused, as I wanted a day in which to pack my specimens; also, I intended to collect more specimens *en route*, and gave orders for going down in two chukkas, spending the first night at the lowest yak camp, at 9,000 feet.

All the snow had gone from the Seinghku valley now, and the flowers grew rank and raw.

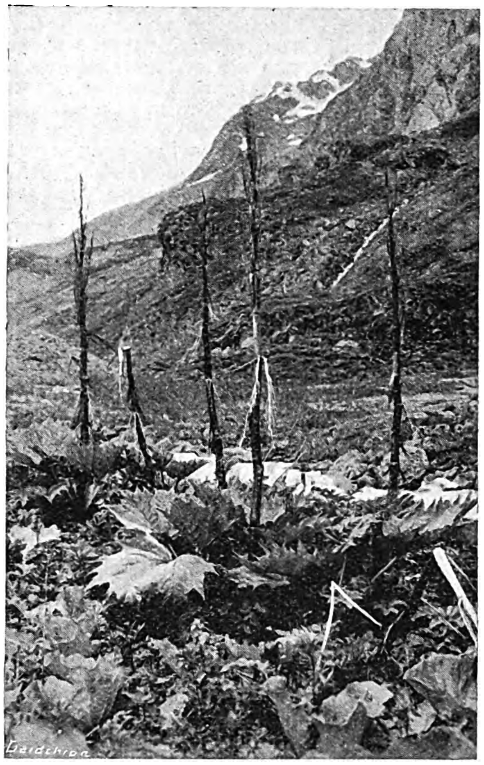

FIG. 164.—GIANT RHEUM, 10 FT. HIGH; DI CHU VALLEY, 12,000-13,000 FT. ALT.

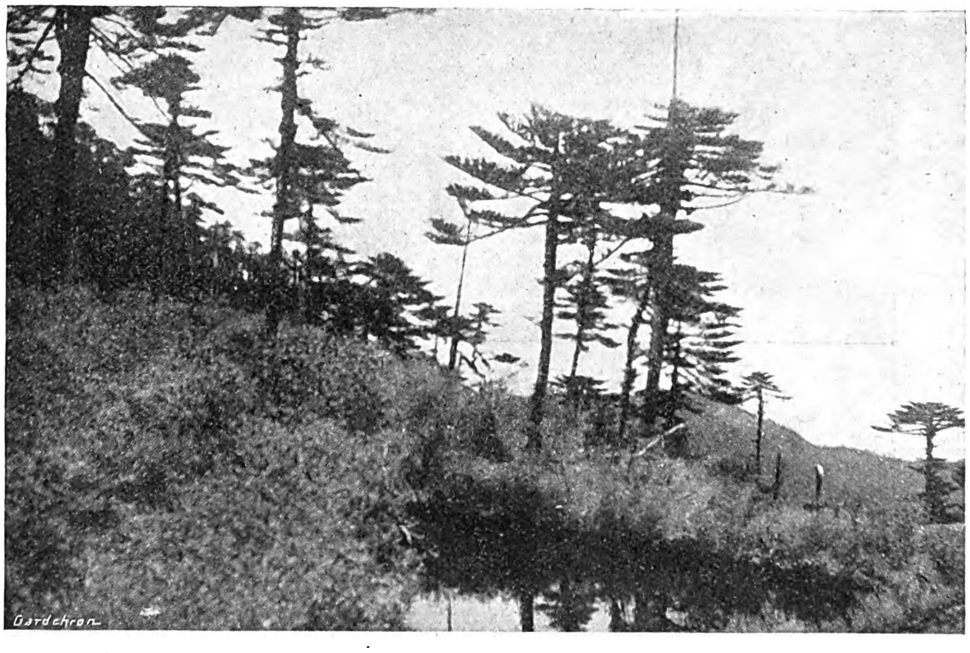

FIG. 165.—ABIES AND RHODODENDRON SCRUB IN THE MIST; UPPER SEINGHKU.

There were lusty species of Pedicularis everywhere, swaying stems of Nomocharis pardanthina, meadows of the sky-blue Meconopsis, its flowers growing flabby and floppy; pillars of the violet Poppy, looking rough, as the top blooms had come off; sheaves of Primula sikkimensis, and wide drifts of the butter-yellow P. melanodonta, the new 'Candelabra.' On the whole, there was not much that was new, only the old familiar things had been fattened up in the perpetual rain; but mention may be made of an ugly, yellow, tubular-flowered Codonopsis, a few gross Aconites, and, in the high alpine region, a violet Salvia, one or two species of Cremanthodium, a tall, prickly, blue-flowered Meconopsis, and an occasional patch of sea-blue Gentian. At these heights August is the slack month—the spring, or rather, summer (for there is really no spring here), and the spring flowers were simply putting on weight; while the autumn flowers "laid low and said nuffin." Bearing this in mind, and remembering that unless Rice arrived from Fort Hertz pretty soon, we should be in a bad way, I decided to return to my base camp and clear things up, and then go down to the Nam Tamai for a week's rest; meanwhile, I hoped, the expected rations would arrive, and I could meet my mail and read the papers in the comparative comfort of the Hpalangdam hut, five marches below my base camp, and twelve marches from Fort Hertz.

On July 30 we left our alpine camp and marched down the valley to the yak camp, finding great difficulty in crossing the swollen stream. As for the main river; opposite the yak camp, the snow bridge over which we had passed so confidently seven weeks ago was now breached, and the river itself so tumid as to be almost unrecognisable. It was undermining the earth scree on the far bank with terrific force, and every few minutes a landslide of earth, stones and plants crashed into the flood, which faltered a moment before sweeping everything before it into limbo. It was fascinating to watch, almost terrifying; for the muffled roar of invisible boulders, hurled against each other beneath the water, shook the air.

The meadow was a marsh, the forest just above, a quag-bog; flowerless too. Only on the screes and streaming turf-tilts were there any flowers. The flame of the Rhododendrons flickered low snuffed out by the pitiless rain. 'Cherry Brandy' still flaunted a few of its illuminated corollas, and the quarantine-yellow, bush 'Campyloglaucum' (K.W. 7046) was well illustrated, being, indeed, little more than a post-impression of the 'Plumber' (K.W. 6,924). But high up on the scree face the dainty but frail Primula siphonantha shook out its tailed corolla like a pale violet comet. It recalls P. Cawdoriana, but is even more slight and slender, the scape not exceeding six inches in height, the rosette of leaves neat and compact, the flowers often reduced to a solitary one, but sometimes three or four. In a certain steep and stony gulley there were three or four hundred plants of P. siphonantha, growing on the rocks, on the earth banks, on the shingle beds, in the full, fighting blast of wind and sun and rain, where nothing else would grow; and that was the only place where I ever saw P. siphonantha, the latest recruit to the section 'Soldanelloides.'

Lower down on these gravelly slopes, where the contour afforded some slight relief, were dense thickets of Rhododendron and particularly Vaccinium, which in the autumn bore amazing, Grape-like bunches of blue berries; and in the bare patches, clumps of a grand Hypericum a yard through, crammed with inch-wide, brass-yellow flowers. These were real cushions, though the long, thread-like stems, with small, close-set, rather grey-green leaves, radiated in every direction, as though shot off from this blazing sun of flowers at the centre of the system. Some of the larger clumps may have been of considerable age; it makes a remarkably fine rock plant for poor soil (KW. 7224).

July 30 was our last night in the alpine valley, and we suffered from a perfect plague of moths, which crowded into my tent, attracted by the light within and repulsed by the rain without. They were of all sizes, and bizarre colours, and they fluttered into my face and down my neck, and into the butter, and were an unmitigated nuisance, though I was able to make an interesting collection. The sandflies were even worse. We awoke in pouring rain, the mountains all around us wreathed in mist, with a fresh coat of snow spread thinly over the higher peaks; and prepared to march.

The stiff descent through the temperate forest was a liquid abomination, memorable chiefly for the discovery of Rhododendron vaccinioides, in flower for the first time. It has tiny, Box-like leaves, and wee, white flowers; and who, looking at the straggling bunches of this epiphyte lolling from a tree trunk, would ever think of comparing it with the flamboyant bulks which to most of us, are Rhododendrons! It was originally collected in Sikkim by Hooker, who, however, did not see it in flower, nor is there any figure of it in his *Rhododendrons of the Sikkim Himalaya*. Until 1924, it had never been collected outside Sikkim, but that year I found it in Tibet, several hundred miles further east, and the chain was completed by discovering it in far Upper Burma in 1926, where several allied species are known.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, October 1, and October 15, 1927.

Except for a few Impatiens, mostly with small flowers, Mimulus, a few Orchids (Coelogyne) and, down below, a Hedychium with salmon flowers, there was not much to collect; also most of one's attention was taken up with preserving one's life—literally. The river was terrific; in places the path was entirely washed away, and the greatest care was necessary, especially where we had to wade out into the swift current. The Bamboo forest was a gloomy bog, but no sooner did we step out into the open meadow of the Tibetan settlement than we became covered with leeches. The long grass was shaking with them, and they easily transferred themselves to us, so that presently the coolies were streaming with blood. In the middle of the afternoon we reached the village, and my hut, which was in a sad plight, the roof broken and leaking, the floor awash, and the rank grass peeping in between the logs. The river was coming down in great force, making a terrific din as boulders were rattled against each other like pebbles; on the previous day the bridge was carried away, and we were now cut off from the headman's house, but a temporary bridge was thrown across during the next twenty-four hours, thus securing communications. We stayed here ten days (August 1-10) partly to recuperate, partly in order to dry and pack my specimens, before going down to the Nam Tamai for a complete change. It rained steadily, and the infinite torment of leeches made leaving the hut a gruesome business; if I went for the shortest climb, I must set to work immediately on my return, picking off several dozen swelling, glutinous tubes!

The big-leafed Begonia on the river cliff was now coming into flower. The stems are lanky, crowned with large, close cymes of small, pink flowers, but the fine leaves are more attractive. Personally, I admire these wild Burmese Begonias much more than I do the monstrous aniline vamps of Peru. There were two small species of Chirita, also on the earth banks, Anemone japonica in the meadow, Lysionotus, with waxy, violet flowers, and scarlet Aeschynanthus in the trees, and other flowers; but the most interesting plants were trees and shrubs, such as grew along the fringes of the jungle. These included three species of Ficus, (1) a large, erect tree with prominently veined leaves; (2) a large climber; and (3) a dwarf creeper; a Myrtus with polished leaves and charming mauve flowers; Rhododendron dendricola, no longer epiphytic; Berberis in fruit; and several woody climbers, including Honeysuckle, Vitus, Rubus and two or three species of Clematis, besides species of the more tropical-looking Apocynaceae. The black-eyed, orange-faced Dendrobium fimbriatum was common, usually high up out of reach on the tallest trees, and there were a few other Orchids, including a gigantic and ungainly yellow saprophyte.

There must be hosts of new and interesting plants in this slaughter-house of mountain ridges and escarpments; but I realised now almost for the first time how inaccessible they are without prodigious preparation and prolonged effort. With the scanty and veiledly-mutinous force under my command the thing was hopeless, even had the barrage of leeches and the impenetrable undergrowth been less formidable than it actually was. I therefore resolved to concentrate my efforts on the alpine valley, and to regard any work I did in the jungle as a pioneering effort which might attract some younger botanist to the sources of the Irrawaddy in the future.

For some days now I had been trying to get coolies, but the famine had laid its heavy hand on the jungle, and it was not till the 10th that I managed to round up fifteen almost naked and starving savages. Next day we started down the valley, reaching the Nam Tamai confluence on the 12th. The most interesting plants met with in flower were the Begonias, with pink, white, yellow and orange-red flowers. This last was charming, and, moreover, the flowers were delightfully fragrant; another had bright chrome-yellow flowers. Begonias are most common on banks and rocks in the jungle between 4,000 and 6,000 feet altitude, and vary considerably in their foliage. The majority have white flowers. One epiphytic species occurs well above 6,000 feet, and of this and others I shall have more to say later. Altogether, I found about a dozen species.

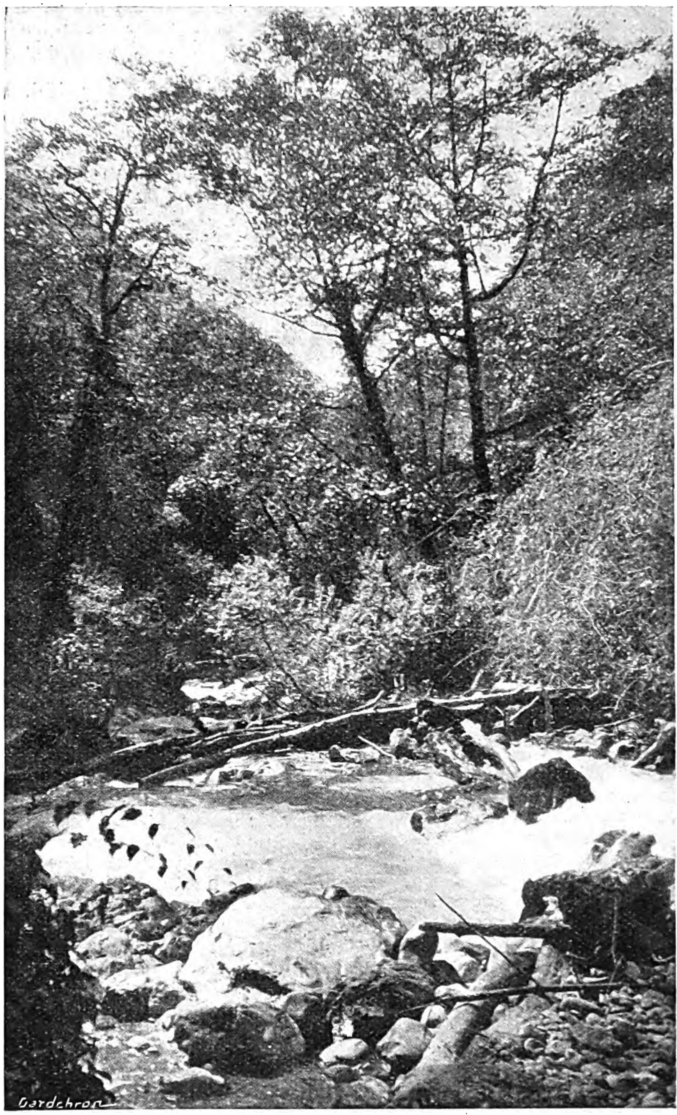

FIG. 166.—ALDER FOREST; (LOWER TEMPERATE AND RAIN FOREST), SEINGHKU VALLEY.

Impatiens is an immense genus, and in the jungle one finds species growing everywhere, with different species in almost every valley, and for every thousand feet of ascent. It is, perhaps, the most characteristic jungle undergrowth of the upper Irrawaddy, and the species are legion, though scarcely one is worthy of cultivation. Rankly-growing Polygonums are also numerous, social, and characteristic, indeed, down at the confluence, a climbing Polygonum seemed to have smothered the entire jungle, and in clearings it was sometimes the only visible plant.

At our first camp, in the meadow, we found the cane bridge over the Seinghku—which I had crossed several times in May—swept away, but another was thrown across while we waited; not that I wanted to cross!

On the ridge I noticed the fine Acer with the long tails of reddening fruits looking as beautiful as ever; and down below I collected a coarse-leafed Hydrangea in flower, Torenia, various Orchids, Zingiberaceae and Acanthaceae.

A party of nomadic Nungs, driven from home by hunger, passed us, and our own coolies, having no food left, were dismissed at the confluence, where I decided to stay a few days. The Adung river was banging its way along pretty heartily, but had been fuller; it fell quite perceptibly during the next twenty-four hours. As for the long cane bridge over the Seinghku immediately above the confluence, that had suffered badly from the rains and looked even more insecure than ever.

Curiously enough, now that we had left the upper valley, the weather began to clear up, and we were threatened with a break in the rains; though whether the armistice was confined to the Nam Tamai, or extended right away up into the high mountains, it was impossible to say. Anyhow, August 12th was a day of almost continuous sunshine, a change one could little appreciate down here where the stifling heat and the solution of air and water which we had to breathe were alike pestilent. However, after being ninety days up the Seinghku it was pleasant to be in a roomy hut again, where one was fairly dry and there was space to turn round. *F. Kingdon Ward.*

TROPICAL VEGETATION AND SOME OF ITS USES TO MAN.

Mr. W. Hales, Curator of the Chelsea Physic Garden, delivered a Chadwick Public Lecture on the above subject, in the Lecture Room, Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Thursday, October 27. Sir William J. Collins presided.

Mr. Hales stated that the Trustees of the Chelsea Physic Garden granted him four months' leave of absence so that he might see tropical vegetation growing under native conditions, and the countries chosen for this purpose were Ceylon, The Straits Settlements, Malay and Java, as it was thought these would afford examples of a varied type of natural vegetation and also diversity of plantation crops.

The value of planting Casuarina trees along the banks of the Suez Canal to prevent the desert sand blowing into, and silting up the canal, was referred to, and slides were shown of the ancient water tanks at Aden, while the interesting rock vegetation of Aden was described.

Ceylon, which is noted for the tropical luxuriance of its vegetation, gave this impression in its capital of Colombo, with its masses of green foliage and the numerous flowering plants which abound in its many parks and gardens. Owing to the different elevations found in Ceylon, this island has varying temperatures and rainfalls in different districts, which make it possible to grow a wide range of crops. The area available for growing crops (excluding lakes and backwaters) is about 12,000,000 acres, but at the present time only about 4,000,000 acres are under cultivation. The acreage devoted to the chief crops is as follow:—Rice, 610,000 acres; other food grasses, 120,000; Coco Nuts, 750,000; Areca, Palmyra and Kitul Palms, 140,000; Tea, 398,000; Rubber, 184,000; Cinnamon, 45,000; Cardamons, 9,000; other spices, 10,000; Sugar, 20,000; Cocoa, 36,000; fruit-bearing trees, 250,000; Tobacco, 25,000; essential oils, 40,000; other cultivated grasses, 15,000; vegetable and garden produce, 350,000; and about 1,000,000 acres under natural pasturage.

The train journey to Kandy was described, as also was the native cultivation of Rice and other products, and the beautiful mountain scenery. Mr. Hales referred to the work of the Royal Botanic Gardens, Peradeniya; early undertakings included the publication of a *Flora* of the colony, and the introduction and acclimatisation of useful plants, such as Cocoa, Cinchona, Rubber, Coffee and Vanilla. Examples of many of these early introductions are still to be seen in the gardens in fine old specimens of the Para Rubber, which were the first examples of this tree planted in Ceylon; Nutmegs one hundred years old and still bearing fruits, etc.

The work of the Agricultural Department and its capacity for dealing with problems which beset the planter, through its staff of scientific workers, and the facilities of its excellent laboratories and research stations, was touched upon. The research station is 650 acres in extent, with two branches—one at Heneratagoda, and the other at Hakgala—at different elevations, for comparison.

The Tea plantation of the New Peradeniya Tea Company was visited; this estate produced in 1923 no fewer than 1,000,000 lbs. of tea, a 1/150th of the total production for the island for that year. Owing to the drought of 1926, only about half that quantity would be reached in 1927. To keep the Tea plants dwarf and in vigorous growth they are cut down every fourth year to within a few inches of the ground. This pruning also helps to keep in check the stem-boring weevil which can only live in hard, woody stems. Rubber, Pepper and Cocoa are also grown as plantation crops on this estate.

The health resort at Nuwara Eilya, 6,200 feet above sea-level, was next visited, and on the way mile after mile of Tea gardens and Rubber plantations were passed. For some distance along the railway banks the Cuban Hemp is grown. Many vegetables are cultivated in the Governor's garden at Nuwara Eilya, and a Japanese S.S. Company has purchased a large piece of land here for growing fresh vegetables for supplying their boats which call at the port of Colombo. On the hills about Nuwara Eliya large plants of Rhododendron arboreum, thirty feet high, are common. Large plantings have also been made of the Australian Acacia melanoxylon, which is now the chief firewood tree—so well has it naturalised.

Six miles south-east of Nuwara Eilya are the Hakgala Botanic Gardens, where many exotic trees are being tested for their value as timber trees or their economic products. Many fodder crops are also being experimented with to test their suitability for covering the barren "patuas" so that they may be used for feeding stock. Hakgala was founded as a hill station for growing Cinchona in 1861, and many of the older plantings of this tree are from seedlings raised here and afterwards distributed to planters. The garden now covers fifty-five out of five hundred acres which are available for development; and these fifty-five acres contain a good collection of economic and ornamental plants.

Penang is very beautiful, said Mr. Hales. This island, on the west coast of the Malay, is fifteen miles long and nine miles wide at its greatest width. The Betel Nut Palm is common, Coco Nut Palms are also much grown, and large areas are being devoted to various fruit plantations. The Waterfall Gardens have been famous for their beauty for many years, and also because of the large number of rare plants distributed from them to other gardens in various parts of the world. Once a bad malarial area, this has now been almost cleared by the valuable work done by the Anti-Malaria Board.

Taiping is a town lying on the Larut Valley mining field. Large areas of this valley were considered to have been exhausted and have been converted into pleasure gardens. Having the largest rainfall in the Malay, it is no wonder that epiphytes flourish here on the trunks and branches of trees in quantity. In fact, nearly every tree is a garden in itself. From Taiping Mr. Hales made a tour of inspection to the Mangrove swamps, which cover 200,000 acres on this side of the Malay, and are a source of some 580,000 dollars revenue to the Government from the sale of wood. An ascent of Taiping (Maxwell) Hill was made to see the hill flora and the health station at 3,600 feet, where many bungalows have been built for the use of Government servants for their short leaves. There is also a large vegetable garden here of some one hundred beds.

At Kuaka Kangsar, the Agricultural Department has a research station in which a number of varieties of Pomeleos are being tested, and not far away is a large area with pedigree Rice under trial. A week previous to my visit heavy rains had fallen in the Malay and caused enormous floods, which resulted in the river overflowing, and much devastation has been caused to Rice and other crops. In fact, this pedigree Rice area was so badly damaged that it would hardly be possible to collect seeds of some of the kinds for sowing again.

The next stage of the lecturer's journey was to Kuala Lumpur, which, since the Federation of the Malay States in 1896, has been developed into the central seat of Government. The public gardens and the lake, which are special features of Kuala Lumpur, cover some three hundred acres, and are being well planted with useful and ornamental plants. Very thorough are the precautionary measures waged here against that deadly enemy of man, the mosquito. Every likely breeding place is kept wonderfully clean and cement-lined channels cut everywhere carry off surplus water to the lake. At the top of the hill near this garden is the Department of Agriculture, which accommodates heads and staffs for dealing with economic botany, plant pathology, chemistry, entymology and mycology. The station itself is surrounded by several acres of trial ground, but so rapid has been the development of the Department that a much larger area has been provided at Serdang, about twelve miles out.

Six years ago this was pure jungle, but at the time of Mr. Hale's visit no fewer than six hundred acres had been cleared and were under cultivation with crops that may be of use to the planter in the Malay. Over-production of the world's needs for Rubber may conceivably result, as was the case with Coffee some years ago. Hence the need for a more varied number of crops upon which the planter may rely. It is the work of this experimental station to test the suitability of such crops as may prove valuable for this purpose. A classified list of crops at present being tried is:—Food crops 19 acres; Fruits, 18; Beverages, 3; Fixed Oils and Fats, 11; Essential Oils, 10; Fibre Plants, 19; Drugs, 9; Spices, 5; Dye Stuffs, and Tannins, 5; Fodder Grasses, 18; Fodder Crops, 3; Cover Crops, 27; Shade Trees, 8; and Miscellaneous Crops, 10 acres.

Large areas were devoted to the plants from which Chaulmoogra oil is obtained, which is now used for curing leprosy. Excellent work has also been done in cross-pollenating the flowers of young Oil Palms, from which an increase of 400 per cent. of fruits is then obtained.

At Fraser's Hill, a Health Station which the Government has allotted for development as a residential place, there is an extremely interesting flora of an old world type. Two days were spent in seeing some of the forestry reserves in company with Dr. Foxworthy, the head of the Forestry Department. From careful costing records which have been kept, it is estimated that certain types of land when given up to forestry will yield a greater financial return than if they were cleared and planted with Rubber.

The lecturer briefly referred to the early introduction of Rubber into the Malay by Sir Hugh Low, who obtained seeds from Ceylon, where they had been sent from Kew—Kew having received them through Sir Henry Wickham from Para, in South America. He outlined the development and growth of the industry which has resulted in over-production. This has been met for the time by the Government's restrictions of output. Research work has been directed toward increasing the yield of Rubber per tree so as to reduce the cost of production, by various "bud grafting" experiments, and also through genetical methods which, of course, are slower.

Singapore, with its fine botanic garden, was also described, and the scientific work done there during the Directorship of Mr. H. N. Ridley, referred to.

The lecturer said that the agriculture of Java divided itself into two classes—the native cultivation of Rice, and the large-scale European cultivation of plantation crops like Rubber, Tea, Cinchona, Coffee, Tapioca, Cloves and Nutmegs. About twenty-three per cent. of the cultivated area of Java is under Rice. In 1923, no fewer than 3,300,000 tons were produced, and even this was not enough to feed the large native population. Of the exportable crops, Sugar is about ten per cent. of the world's production of Cane Sugar. This Sugar is grown chiefly on the alluvial plains of Central and East Java, on land leased from the native holders once in three years for the cultivation of a single crop. The Sugar, when growing, is fed with sulphate of ammonia, some of which is left in the soil when the land is returned to the natives, and in this way a larger yield of Rice is obtained. Tobacco is fed with phosphates, which also enrich the soil for the Rice which follows.

Cinchona is one of the interesting crops of Java, and ninety per cent. of the world's supply of this drug comes from Java. Large areas are also used for growing Tuberoses for the scent which is distilled from the flowers.

The Botanic Garden at Buitenzorg contains the richest collection of plants of any garden seen by the lecturer in the East. As a scientific institution it ranks next to Kew. Near it is the Food Department of the Dutch Government which is doing excellent work. One of the most fascinating sights in travelling through Java is the Rice plantations, and especially so through the Plain of Leles with its terraced Rice fields, flooded with water which glistens in the sun with every shade of green, from the light green of the Rice seed beds to the darker green of the young transplanted Rice, and the yet darker shade of the more fully developed plant.

RARE GARDEN WORMS.

IV.—The Worm with a Double Tail.

A regular reader of this journal—a gardener —writes that, seeing the subject of worms treated in these columns he forwards a specimen found while digging. "I think it is a bit out of the ordinary, as it has two tails—a thing I have never seen before. It would be interesting to know if any one else has ever come across such a thing." The phenomenon is sufficiently uncommon to justify our placing it on our list of Rare Garden Worms, and devoting a little time to its study.

First let me describe the specimen, then we can consider its significance. We have here what the late Frank Buckland would describe as a Maiden Dew-worm, but which we shall speak of as an immature Long-worm (Allolobophora longa, Ude). The Long-worm is peculiarly liable to variation, and in this respect is strikingly different from the true Earthworm (Lumbricus terrestris) for which it is often mistaken. I have never found a true Earthworm with a double tail, while it is exactly thirty-five years since I described the first specimen of the forked Long-worm which came under my observation. It is a somewhat curious fact that though a good many cases are on record in English, American and Continental literature, there is rarely any proofs of such freaks reaching a marriageable age. This is determined by the girdle, and I personally have never seen a girdled specimen of a bifurcate worm. The significance of this will appear later.

The specimen submitted by our correspondent (Fig. 167) is about three-and-a-half inches in length, but when moving actively could stretch to four-and-a-half or five inches. The front portion contains seventy-seven rings or segments and is about two inches long. The tails are almost exactly alike and contain about ninety segments each, though they are only one-and-a-half inch in length. The reason is that the first fifteen segments are two or three times as wide as those in the tail, and contain most of the important organs and glands. There is considerable difference in the appearance of the tails in different specimens, which may possibly be due to difference of origin. Sometimes the secondary tail points forward, or juts out at right angles, as though it belonged to a second specimen which had been united to the original when they were lying head to tail as embryos in the cocoon. I gave an illustration of that type in these pages some years ago.* The one now under review, however, differs from this, in the fact that both tails point backwards, and could lie so close together that they would slip easily into the burrow when the worm went in head-foremost. A difficulty would arise when the creature wished to protrude the tail for the purpose of making a "cast" or ejecting the earth contained in its intestines.

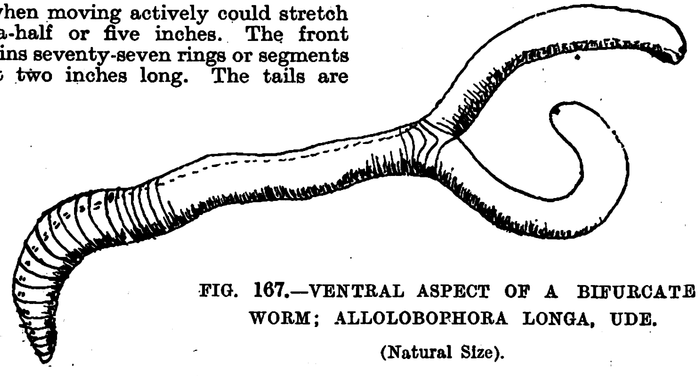

FIG. 167.—VENTRAL ASPECT OF A BIFURCATE WORM; ALLOLOBOPHORA LONGA, UDE.

(Natural Size).

So long ago as 1779, Dr. Bonnet drew attention to these peculiarities in worm-structure, and from that time until the present many cases have been placed on record. Specimens are to be found in the British or other museums, and among my collections recently presented to the University of Birmingham. It should be remarked in passing that worms sometimes have bifurcate heads as well as tails, and this fact leads us to enquire into the possible origin and significance of the phenomenon. Why have worms at times developed two heads or forked tails? There are quite a number of possible answers to this question. I am content to mention a few of these, and leave others who have studied the subject carefully to add further suggestions.

To some students I have little doubt the first thought will be that we find here one further illustration of Nature's attempts to introduce a new type of worm. Nature is a great experimenter. She loses heavily in speculation—as do many other speculators—but now and again she scores, and then we get a valuable addition to our stock of living things. The student of variation and its bearing on the doctrine of evolution knows the value of such forms as these, and it cannot be too strongly affirmed that all departures from the normal in plant, insect, or animal should be carefully noted and if possible preserved. That new forms do arise from sports, freaks, abnormalities and variations everyone is aware, and we may therefore legitimately ask whether the worm of the twinned tail is one of these? It has been noted, however, that the specimens usually found have not reached maturity, and the inference is that worms with two tails are not specially well adapted for the battle of life.

Have we, then, a case of reversion? Is the second tail a recrudescence or a reminiscence of those times when worms usually had more than one tail? Quite possible. At Kew, Oxford, Regent's Park and elsewhere I have found a foreign worm in the Lily ponds whose tail is beset by growths or processes known as branchiae, which are, to all intents and purposes, secondary tails. Dr. Beddard, who first discovered the worm, named it Branchiura, or the worm with branchiae on the tail. These would be of great service to a worm living in the water under certain conditions, and as our earthworms are descended from waterworms it is easy to see how, from time to time as in many groups of animals and plants, there may be a recrudescence of a lost feature.

Some of the peculiar forms of bifurcate tails cannot, however, be so explained, and we turn to a third theory. Worms lay their eggs in capsules or cocoons, and it is just possible that more than one embryo may survive. Suppose two embryos coalescing and forming Siamese twins! The head or the tail of the weaker might fail to survive, but the other portion might succeed in attaching itself permanently to the stronger form, and this would give us an imperfect twin, or a worm with two heads and one tail, or two tails and one head. This is in other groups a by no means uncommon type of abnormality, but may be regarded as a mere accident, without any physiological significance.

Some students of teratology, as this branch of biological science has been named, lay a good deal of stress on the effects of parasitism. Indeed, parasitology has thrown a flood of light on this kind of study during recent years, and as worms are peculiarly liable to be affected by a great variety of parasites it is not unreasonable to suppose that abnormal forms originate under their action. By stimulating, modifying, checking and otherwise altering the secretions, glands, cells and organs they may in many ways affect the structure of their hosts, and we cannot deny that a forked tail might originate in this way, though at present there are not many known cases which could be so explained.

This, however, leads us to two further possibilities. One often hears of proliferation, and if the cell-structure proliferates, or a segment starts two independent centres of growth, bifurcation might easily be the result. Now we usually find that the bifurcation roughly marks the beginning of the third portion of a worm's body. Measure up a worm and it will be found that the first section, from the head to the girdle, contains the organs of generation, the gizzard and a variety of glands. The second portion begins with the girdle which is concerned principally with the formation of the egg capsule or cocoon. But what of the hinder portion? Has it no use? Is it purely to enable the worm to crawl or hold on to its burrow? There is much evidence to show that the hinder portion is of importance in relation to alimentation. In some way it may have to do with the final preparation of the food or alimentary substances upon which the health and nourishing of the worm depends. Much remains to be learned on this subject but it is a suggestion worthy of consideration that bifurcation originates at a point in the worm's anatomy where change of function takes place, and that bifurcation may be due to this fact.

It will be seen that I have been using up the ideas which forty years of careful study have suggested, and that these are merely hypotheses. Students of any other forms of life can easily suggest from their own researches other possible lines of study, but I have kept to my own domain and my own observations because these are ultimately what investigators require. So we see what food for thought may be supplied by the discovery of such a thing as a worm with two tails, and I cannot but express the hope that readers will always note anything which strikes them as unusual, and afford specialists an opportunity of examining and reporting thereon. *Hilderic Friend, Solihull.*

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* *The Gardeners' Chronicle*, August 10, 1912, page 110.

MESEMBRYANTHEMUM.

(*Continued from page* 349).

KEY OF THE SPECIES.

11. Leaves tapering to an obtuse point at the apex and the pairs more or less obliquely crossing one another, pellucid-dotted as viewed against the light; pedicel very stout, 9–10 lines long and 3 lines or more thick; stigmas 8–9. **5, cruciatum**

Leaves tapering to an obtuse or subacute apex, the pairs in two ranks or set slightly oblique to one another, very indistinctly pellucid-dotted, one of each pair slightly concave on the face; pedicel 9 lines long; corolla 2–2¼ inches in diameter. **11, concavum**

Leaves obliquely obtuse, broadly rounded or subtruncate at the apex, with or without a small point or mucro at the end of the upper edge, usually arranged in two ranks, not conspicuously pellucid-dotted. **12**

12. The larger leaf of each pair shortly incurved-hooked or slightly hooded at the apex; pedicel 6–9 lines long; corolla 2 inches in diameter; petals acute; stigmas 10. **14, uncatum**

The larger leaf of each pair not incurved-hooked at the apex, all leaves widely spreading, straight or more or less curved or bent down towards the ground, 1¼–4 inches long, strap-shaped; pedicels 3–9 lines long; corolla 1¾–2½ inches in diameter; petals acute; stigmas 9–10. **21, latum and vars.**

Leaves not widely spreading, more or less directed forwards, with the pairs obliquely crossing one another, 1½–2 inches (or perhaps more) long, 8–12 lines broad, usually with parallel sides; pedicels 0–6 lines long; corolla 2¼–3 inches in diameter, fragrant; petals somewhat acute or obtuse, entire; stigmas 8. **23, suave**

Flowers sessile or subsessile. To the end of Key.

13. Leaves 3–6 lines broad at the

middle, but often broader at the base; leaf-pairs obliquely crossing one another. 14

Leaves 6–18 lines broad at the middle. 16

14. Leaves with a pustule or pallid spot at their base on the upper side, gradually tapering from the base to an acute apex; petals obtuse and minutely toothed at the apex; stigmas 8. **7, Salmii**

Leaves without a pustule or pallid spot at their base. 16

15. Leaves subterete and slightly flattened on the face or semiterete, 2–3 inches long, erect or ascending and curved; corolla 2–3 inches in diameter; petals very obtuse and notched at the apex; stigmas 7–8. **1, arrectum**

Leaves semiterete, 3–4 inches long; corolla 3–4¾ inches in diameter; petals united at the base for about a quarter-of-an-inch and up to 2 lines broad; stigmas 10. **12, angustum**

Leaves tapering from the base or narrowing from above the middle to an acute or subobtuse apex, which is tipped with a short whitish or reddish point or mucro, and the pairs obliquely crossing one another, pellucid-dotted; keels of the calyx-lobes minutely ciliate; stigmas 8–10. **9, praepingue**

16. (*From* 13; *leaves* 6–18 *lines broad at the middle; to end of Key*). Leaves with a pustule or pallid spot at their base on the upper side; petals obtuse and minutely toothed at the apex. 17

Leaves without a pustule or mark at their base on the upper side. 18

17. Leaves tapering from the base to an acute point, and the pairs more or less crossing one another; corolla 2¼ inches in diameter; stigmas 8. **7, Salmii**

Leaves strap-shaped, with parallel sides and an inch or more broad, arranged in two ranks; corolla 3–4 inches in diameter; stigmas 9. **18, grandiflorum**

18. Leaf-pairs obliquely crossing one another, 1¾–3¼ inches long and 5–9 lines broad, yellowish-green or light green, pellucid-dotted; stigmas 8–10. 19

Leaves arranged more or less in two ranks and except in 8, *G. Marlothii*, grass-green and not pellucid-dotted. 20

19. Leaves tapering to the apex and all or some of them tipped with a short whitish or reddish point or mucro. **9, praepingue**

Leaves not tapering to the apex nor tipped with a short point or mucro; stigmas 8–2 **13, taurinum**

Leaves very obtuse or obliquely rounded at the apex, sometimes with a minute point at the end of the straight or slightly hooked upper edge; stigmas 6–8. **20, cornosum.**

20. Leaves upcurved and one or both of a pair distinctly hooked edgeways or by a slight twist at the apex (see also 22, *G. depressum*, in which the leaves are sometimes hooked at the tips); stigmas 8–9 21

Leaves obtuse or rounded and not or but slightly upcurved edgeways and not forming a distinct hook at the apex, but with or without a small point or mucro at the end of the upper edge; stigmas 7–8. 22

21. Leaves strongly upcurved-hooked edgeways at the apex and the large hook acute or sometimes obliquely truncate, 3–4½ inches long and 10–12 lines broad, the larger leaf of each pair with an impression of the smaller leaf upon it, forming a ridge along the margin at the middle part and an oblique ridge below the apex; corolla 3–3¼ inches in diameter; petals obtuse and usually minutely toothed; stigmas 8. **19, Muirii**

Leaves upcurved edgeways or by a slight twist and slightly hooked at the apex, 2½–4 inches long and 6–7 lines broad at the middle, directed forwards and more or less deflexed, without a ridge along the margin on the face; corolla 2¼ inches in diameter; petals obtusely pointed or notched at the apex; stigmas 9. **15, proclive**

22. Leaves, in summer, opaque greyish-green or chalky green, prettily tinged with rosy or purplish when fully exposed to the sun, or becoming green in winter under cultivation in England, ¾–2½ inches long, 9–18 lines broad, subtruncate or broadly rounded at the apex. **26, Neilii**

Leaves always grass-green or light green and more or less shining. 23

23. Leaves pellucid-dotted when held against the light, mostly 2–4 inches long and 8–10 lines broad at the middle, somewhat narrowing upwards to an obtuse and often obliquely mucronate apex; stigmas 7 (or 7–9). **8, Marlothii**

Leaves not pellucid-dotted, ¾–3 inches long; corolla 2¼–3¼ inches in diameter; stigmas 6–10. 24

24. Leaves tongue-shaped, 14–18 lines broad, with the upper edge cartilaginous and very acute like the edge of a knife; surface-cells even, not raised; stigmas 10–11. **24, linguiforme**

Leaves variable, 6–14 lines broad, not cartilaginous nor like a knife edge at the edges; surface with transverse rows of raised linear epidermal-cells as seen under a strong lens, stigmas 6–10. 25

25. Leaves very variable, ovate to tongue- or broadly strap-shaped, 6–14 lines broad; petals obtuse and minutely toothed at the apex; flowers very fragrant; stigmas 8–10; capsule with 8–10 gaping ridges on the top. **25, fragrans**

Leaves strap-shaped, 8–13 lines broad, and of nearly equal breadth throughout. 26

26. Leaves very spreading, apparently 7–8 lines broad and not very thick, slightly curved upwards edgeways at the tips, and with a short point directed forwards at the apex of the upper edge; stigmas 10; capsule with 10 gaping ridges on the top; flowers opening only in bright sunshine **22, depressum**

Leaves directed forwards, 8–12 lines broad and 3–6 lines thick, apex variable; stigmas 8; flowers opening in sunless or sunny weather **23, suave**

Leaves 8–13 lines broad, thick and soft, very convex on the back, very obtusely rounded at the apex, not upcurved edgeways, and with or without a short point directed forwards on the upper edge at the apex; flower slightly scented; stigmas 6–8; capsule convex without any ridges on the top.

N. E. Brown **20, carnosnm**

(*To be continued*).

THE AGRICULTURAL HOLDINGS ACT, 1923.

The most important Act of Parliament with which the market gardener is concerned is, I think it is agreed, the Agricultural Holdings Act of 1923. This Act consolidates the law on the subject and codifies the provisions of previous Acts and case decisions. And in addition it contains special provisions with regard to market gardens, allotments and cottage gardens.

The sections dealing with market gardens may be dealt with first. The definition of a market garden, according to the words of the Act, is: "a holding cultivated wholly or mainly for the purpose of the trade or business of market gardening," and a holding is defined as: "any parcel of land held by a tenant which is either wholly agricultural . . . or in whole or in part cultivated as a market garden, and which is not let to the tenant during his continuance in any office or employment held under the landlord." With regard to the expression "market gardening," there appears to be no definition of this term in the Act, but since it is qualified somewhat by the words "trade or business," to entitle its occupier to enjoy the benefits of the Act the land must be cultivated on a commercial basis, and not merely as a pastime or for enjoyment without any consideration of profit, and, as a general rule, the cultivation of a garden, whatever its size, if the produce is only for one's own use and not wholly or mainly for sale, is not a market garden. The term, however, includes land used for producing fruit, flowers and vegetables, and orchards where the fruit is to be sold, but according to a decided case, it does not include agricultural land on which Potatos, Peas, Celery or Carrots are grown in open fields. It may be noted that it has been decided by the Courts that land covered with glasshouses may be included in the term market garden.

So much for the definition of a market garden for the purposes of this Act. The gardens to which the special provisions of the Act apply, and the different regulations which govern them, may be divided into two distinct classes, in either of two ways. They can be divided as (1) those where the tenancy began before January 1, 1896, and those where it began on or after that date; or (2) those where the land was cultivated as a market garden with the knowledge and consent of the landlord, and those where it was cultivated as a market garden without his knowledge or consent.

Taking first those where it has been agreed by an agreement in writing made on or after January 1, 1896, that they should be let or treated as market gardens. These include those gardens the tenancy of which began before 1896 and were used as market gardens without the landlord's consent, but which since that date have been cultivated under an agreement in writing as market gardens, and all gardens the tenancy of which began on or after January 1, 1896, under an agreement that they should be cultivated as market gardens.

Therefore, if the tenancy of a market garden began before January 1, 1896, and was used as a market garden without the knowledge of the landlord, or if it began after that date, in order that the tenant may claim the special provisions provided by the Act, he must obtain an agreement in writing from his landlord whereby the latter consents to let the land as a market garden or allow it to be used as one.

The second class include those gardens which were let "under a contract of tenancy" current on January 1, 1896, and cultivated as market gardens with the knowledge of the landlord. As regards falling within this class, there is no necessity for the tenant to obtain any agreement in writing from his landlord before he can claim the special privileges applicable to market gardens. On showing that he was tenant of the land on January 1, 1896, and it was then used as a market garden with his landlord's knowledge, he will be entitled to these privileges.

The only difficulty here is the meaning of the term a "contract of tenancy." This is defined as meaning a "letting of or agreement for letting land for a term of years . . . or from year to year," so that the Act only applies to land let on a lease of yearly tenancy. *Harold Sharman.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131-137).

(*Continued from p.* 352).

ENGLAND, S.W.

Cornwall.—The winter of 1926-7 was exceedingly mild, and even at 400 feet above sea-level we had no snow; during the latter part of April, the whole of May, and the first half of June we experienced delightful spring weather. Fruit trees bloomed profusely in ideal conditions, and at the time of writing it is doubtful whether we shall be able to do enough thinning to regulate the crops; a moderate yearly crop is much more acceptable than a "bumper" one at any time. I regret to have to record a very poor crop of Strawberries for the fourth year in succession. Our plants seem to have degenerated and attempt to produce a moderate crop of fruit round about Christmas a quite useless attempt, of course; in the summer there is a dearth of flowers. *Harry Williams, Tolvean, Redruth.*

——At one time Apples looked very promising but we experienced bitterly cold winds—reaching gale force at times—when the trees were in bloom, with the result that we have irregular crops. Royal Sovereign and King George Strawberries were a failure, but Madame Kooi, as usual, gave a good crop. All bush fruits bore excellent crops. Our fruit trees are making good growth and are cleaner than they have been for some years past. *A. E. Meredith, Cotehele Gardens, St. Dominick.*

Devonshire.—From the amount of strong, healthy blooms our trees carried, very heavy crops were anticipated, but owing to the late frosts alternating with hot sunshine, the fruits, although apparently set and growing fairly well, were adversely affected, and the trouble was aggravated by a very severe spring drought which caused many to fall. What promised to be a bumper crop was reduced to an average one of poor quality. *J. A. Stidston, Bishopsteignton, Teignmouth.*

——With the exception of Lord Grosvenor, Keswick Codlin and Irish Peach, Apples in these gardens have cropped much under the average. Orchards particularly failed to set fruits after a fair show of blossom. Pears are good (wall-grown), Marie Louise, Glou Morceau and Doyenné du Comice being our most reliable varieties. Small fruits have been plentiful and excellent in quality; Raspberries in particular, the Devon variety carrying a heavy crop of fine fruit on a northern aspect. Strawberries planted late in July or early August gave splendid results, but other beds had crops inferior both in quantity and quality. Where sufficient ground and runners are at command, closer planting of annual beds of Strawberries should be taken advantage of, more than is generally done. Our soil is a deep, holding loam, on a rocky or shingle formation, and grows excellent produce. *T. H. Bolton, Hartland Abbey Gardens, Hartland.*

Somerset.—Apples are an average crop; Cox's Orange Pippin, Blenheim Pippin, Warner's King and Bramley's Seedling carry full crops this year. Pear prospects were damaged by frosts during the flowering period; Plums also were damaged, but many sorts bore good crops, notably Early Rivers, Victoria, Pond's Seedling and Monarch. Damsons, too, carried good crops. Peaches and Nectarines cropped well, and the trees are clean and promising. Bush fruits were good, especially Raspberries and Black and Red Currants. Strawberries bore moderately; the only varieties that succeeded here were Royal Sovereign and Givon's Late Prolific. Our soil is a heavy, red loam, overlying stone. *James Glasheen, Hestercombe, Taunton.*

——Fruit crops generally were fairly good, most varieties of Plums bearing very heavily. Small fruits have also been plentiful, excepting Strawberries, which suffered from the early May frosts. Outdoor Peaches carried a fair crop of fruits of good quality. *William Mackay, The Gardens, Kingweston, Taunton.*

——Apples are a good average crop; Blenheim Pippin failed for several successive seasons but cropped well this year. Pears are scarce, as one expected after such an abundant crop last year. Plums were scarce. Peaches and Nectarines on walls were plentiful. Early Strawberries suffered badly from drought; late sorts benefited by the rains and gave some good fruits. Raspberries, Loganberries and Gooseberries were satisfactory, and Black Currants were plentiful. The worst thunderstorm in living memory passed over this district on July 12, when 2·98 inches of rain fell within two hours, accompanied by very large hailstones, with the result that much damage was done to ripe fruits, whilst Apples were badly bruised and soon showed signs of decay around the bruises. Nuts are plentiful. *J. Yandell, Halswell Park Gardens, Bridgwater.*

Gloucestershire.—The late frosts which played such havoc in some parts of the country affected us very little in Bristol West, but in Bristol East many early crops were badly damaged. A few young suckers of Loganberries were damaged, but Raspberries growing alongside escaped. Apple, Pear and Plum trees bore splendid blossoms, but owing to cold winds and low temperature, particularly at night, there was only a partial set. All small fruits carried heavy crops, but the fruits were rather small, owing to the prolonged drought. In a small orchard, where the trees are between sixty and one hundred years old, we have some splendid crops of Blenheim Pippin, Hawthornden, Gascoyne's Scarlet, Irish Peach and Ironside Apples. Blenheim Pippins are of splendid quality in alternate years. Our soil is heavy, yellow clay. *John Ettle*, 201, *Henleage Road, Westbury-on-Trym, Bristol.*

——Raspberries, Red and Black Currants, Loganberries and Gooseberries carried exceptionally heavy crops in these gardens. Apples had to be thinned severely. Marie Louise, Conference, and Ne Plus Meuris Pears fruited well, and Charles Ernest, Durondeau, Buerré Diel are good, but trees of Josephine de Malines, Pitmaston Duchess, Souvenir de Congres and others, although protected with two thicknesses of nets, have not a fruit on them. *W. I. Mitchell, Westonbirt Gardens, Tetbury.*

——Our garden escaped the full severity of the late spring frosts, and in the fruit quarters Gooseberries and Pears were practically the only sufferers. The Apple crop is very good, the surprise being the comparative failure of Lord Derby. Varieties carrying especially good crops are James Grieve, Cox's Orange Pippin, Stirling Castle, Tower of Glamis, Lane's Prince Albert and Edward VII. This is not considered a good Plum district, but most trees carried a fair sprinkling, and some Gages heavy crops. Small fruits, particularly Raspberries and Black Currants, carried heavy crops of very fine fruits. Nearly all trees are in a clean and healthy state and have greatly benefited from the tar-oil spraying given during the past two seasons. Our soil is of a poor, cold, clayish nature, over limestone, but has been cultivated for quite two hundred years. *S. W. Dance, Williamstrip Gardens, Fairford.*

——Apples and Pears cropped well; I hear good reports of Apple crops in the neighbouring farms. Plums and Damsons bore heavy crops, and Peaches on walls cropped freely. Gooseberries, Black and Red Currants, Raspberries and Loganberries, all fruited splendidly. Strawberries have deteriorated, especially the variety Royal Sovereign. Rain was of daily occurrence from June 16 until July 6, and crops of all descriptions benefited thereby; rain was badly needed. *John Banting, Tretworth Gardens, Falfield.*

——But for the disastrous frost of the last night in April, fruit crops generally might have proved a record as there never was a better prospect. In places, where the frost was less severe, there are fair crops of Apples, Pears and Plums. Some varieties of Apples suffered more than others, notably Bramley's Seedling and Blenheim Pippin, while Worcester Pearmain and Lane's Prince Albert suffered less, but very late-flowering varieties, including Court Pendu Plat and New Bess Pool escaped and are bearing well. Strawberries were badly affected by the frost, and not only has the crop been small and poor in quality, but the plants look unhealthy. Gooseberries and Black Currants cropped well, but American mildew gave a lot of trouble. Where fruit trees were sprayed with a tar-oil wash there has been little injury from aphis and caterpillars, but the control of capsid bug, particularly in the Cheltenham area, presents a serious difficulty. *G. H. Hollingworth, Shire Hall, Gloucester.*

——Most varieties of Apples and Pears blossomed profusely, but the period of fertilisation was unduly prolonged through unsuitable weather, and most of the flowers dropped. A dry period followed, which prevented the fruits from swelling and after the welcome rains a large percentage of fruits remaining also dropped. The crown blossoms of Strawberries were damaged by frosts, and the remaining blooms carried small fruits. Black Currants suffered badly from big bud mite, especially Boskoop Giant. Red Currants and Gooseberries bore good crops. Peaches were badly infested with green aphis, this being unusually persistent in spite of several sprayings. *George H. Emmett, The Gardens, Lydney Park, Lydney.*

FRUIT GARDEN.

THE BEST DESSERT APPLES FOR CORDONS.

Most varieties of Apples lend themselves to restricted cultivation, but some are more amenable to cordon cultivation than others. In making a selection for this purpose, one should choose those varieties of close-spurred habit. I have also made it a practice to add to the planting compost for each tree about 1 lb. basic slag, ½ lb. bone-meal, two ounces flowers of sulphur, and one ounce sulphate of iron. These materials are mixed with turned-out soil whilst planting proceeds. Firm planting is desirable.

The following Apples are excellent when grown as cordon-trained trees:—St. Everard, August-September; an early Apple of Cox's Orange Pippin flavour; yellow, striped with crimson; flesh yellow, crisp and juicy.

Maidstone Favourite, a real beauty and a heavy cropper; the attractive, flattish fruits are striped with carmine; this Apple is now coming on the market as a useful early variety.

Herring's Pippin, a variety of great beauty and recommended for dual purposes; it keeps well until the end of November; the fruits are rather large, round, and conical; colour greenish-yellow, with red flush and stripes; flesh pale yellow.

Heusgen's Golden Reinette, a late keeping Apple of high quality; fruits flat, russety and bright scarlet; flesh yellow, crisp and sugary; one of the very best late-keeping dessert Apples.

Golden Delicious is a new Apple that requires the protection of a wall or warm corner, as it has a somewhat delicate constitution. The fruits are large and golden-yellow; flesh yellow, very sugary and highly perfumed. This variety keeps until the end of January, when properly stored.

Claygate Pearmain is an old and excellent dessert Apple that should be in every garden. Fruit of medium size, dull russet with a faint crimson cheek; flesh tender, sugary, vinous and richly-flavoured. The fruits should remain a long time on the tree, otherwise they shrivel soon after they are gathered.

Ellison's Orange is hardier and more robust than Cox's Orange Pippin, and a variety that has a great future. The fruits are of medium size, similar in shape and colour to those of Cox's Orange Pippin; flesh tender, yellow, sugary, and of good flavour. I have seen some very fine, handsome fruits grown on cordon trees. The season of this excellent Apple is from the end of October to mid-November.

Easter Orange is a healthy grower and free cropper, the fruits keeping until June. The late-keeping quality of this Apple commends it to all growers. The fruits are of medium size, roundish-conical, deep golden-yellow, with flushes and stripes of dark brown-red. Flesh firm, yellow, sugary and of excellent flavour.

McIntosh Red is a brilliantly-coloured Apple recently introduced from Ontario, and I recommend it for its free-cropping habit and handsome appearance.

Superb, a late dessert Apple of merit, has medium-sized fruits of flattish-round shape and golden-yellow colour, with red flush; flesh crisp, sweet and aromatic. This is a good cropper and undoubtedly an excellent variety. When properly stored, the fruits remain sound until quite late in the season.

St. Cecilia is a late Apple possessing something of the flavour of Cox's Orange Pippin. The fruits keep until January and February, and are of medium size, even, oval, golden-yellow, with crimson flushes and stripes.

Orleans Reinette is, I consider, one of the best six dessert Apples. The fruits are of medium size, flat, rich red and golden russet; flesh sweet and crisp; in use during January and February. *Pomona.*

HOME CORRESPONDENCE.

The R.H.S. Fruit Show.—Having sent in entries for the recent R.H.S. Fruit Show, I, like others, had my entry form returned for my employer's signature! Are gardeners now held in such poor respect by the Council of the Royal Horticultural Society that its members conceive it possible for a gardener to think of showing his employer's produce without first obtaining his employer's sanction to do so? Another matter has also arisen in regard to the recent fruit show: a week after the entries were sent, those who had entered found the postman had left an official letter from the Secretary of the R.H.S. stating that his Commissioner "will have the pleasure of calling upon you during the day"—rather short notice, should one have made other arrangements for the day. The reason of this visit, as stated, was to inspect the fruits entered; in my case the inspection was carried out in a thorough and methodical manner, but the whole business seems, again, to cast a doubt on the honesty of the exhibitor. It would be very interesting to have the opinions of other readers who were exhibitors. *Exhibitor.*

Fruit Thieves at Westminster.—I was one of the largest exhibitors at the Royal Horticultural Society's Fruit Show on October 11, and I can endorse every word written by your correspondent Mr. W. J. Penton (p. 351) in regard to the stealing of fruit. I lost about fifteen dishes altogether; my exhibits were in various parts of the hall and the two annexes, so that it was impossible for me to keep the whole set under observation. Being single-handed and fairly well-known, no doubt I was shadowed all the time; if I had intended exhibiting at other shows it would have been a very serious matter. The intrinsic value of the fruit is not serious, but to have the fruit stolen practically under one's eyes is intensely irritating, and steps should be taken by the Society to put an end to this state of affairs. The hall should be cleared and then only exhibitors and their assistants admitted. *J. A. Stidston.*

Soil Sterilisation.—Your article (p. 259) on Soil Sterilisation was most interesting to me, and I looked forward for some comment by certain of your correspondents. It recalls an experience I had when gardener at Normanton Park, Stamford. I made arrangements for sterilising all our potting soils and the results were surprising in a very short time. We potted half our French Beans (for forcing) in sterilised soil, and half in non-sterilised soil. We soon observed a marked difference, so much so, that when rearranging plants in the forcing house it was quite easy to pick out the sterilised set. The foliage of these was stronger and darker, and the crop of Beans was one hundred per cent. better than in non-sterilised compost. The chef informed me, too, that the Beans grown in sterilised soil were much the nicer when cooked. Unknown to me, my outside foreman coated one of the Mushroom beds in the Mushroom house with sterilised soil, and when the beds were in full bearing he called my attention to the two beds; the difference was striking; the bed coated with sterilised soil was in full bearing when the non-sterilised bed had not a Mushroom showing. These two examples prove conclusively that sterilised soil has a very stimulating effect on growth and development. We next tried sterilising the soil for Palms (Kentia Belmoreana) by potting six plants on sterilised and six in non-sterilised compost; the difference was again very pronounced. We grew Begonia Gloire de Lorraine in sterilised soil, and exhibited about two dozen plants at one of the meetings of the Royal Horticultural Society; these plants were in forty-eight-sized pots and most of them measured eighteen inches in diameter. The members of the Floral Committee remarked that these were the finest plants they had seen of B. Gloire de Lorraine in such small pots. The foliage was of a beautiful green colour, and the flowers abundant. We were awarded a medal. *John Butler, Rose Cottage, The Moors, Kidlington.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 1.—As is usual at this season, there was a small show at the fortnightly meeting of the Royal Horticultural Society, but the groups of Orchids, Chrysanthemums, Roses, Carnations and general flowers made a bright display. There was also a good collection of Potatos and several growers set up dishes of Apples of splendid appearance. A number of paintings of flowers and garden scenes and garden plans helped to fill the hall. The Orchid Committee recommended two First Class Certificates and one Award of Merit, and the Floral Committee recommended six Awards of Merit to novelties.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. Frederick J. Hanbury, Mr. Arthur Dye, Mr. J. E. Shill, Mr. Charles H. Curtis, Mr. W. H. Hatcher, Mr. Albert A. McBean, Mr. John C. Cowan, Mr. T. Armstrong, Mr. R. G. Thwaites and Mr. E. R. Ashton.

First Class Certificates.

Cypripedium Chardmoore var. Alfred Bridges (C. Lena × C. Christopher var. Grand Duke Nicholas).—A wonderful Cypripedium with a big, rounded dorsal sepal that is four-and-three-quarter inches wide, white, with a green base, and purple spots on the green area that also extend to the central part of the white area. The petals are green, marked with purple-brown and the bold lip is also green. Shown by Miss A. B. Moore (gr. Mr. Page), Chardwar, Bourton-on-the-Water, Gloucestershire.

Laelio-Cattleya Sunbelle var. Sunset (C. Thora × L.-C. Serbia.)—In this pleasing hybrid the flowers are of excellent substance and well-balanced. The sepals and petals are rosy-mauve; the lip is waved, deep yellow, with a pink margin and some deep purple markings at the front centre. Shown by F. J. Hanbury, Esq. (gr. Mr. Farnes), Brockhurst, East Grinstead.

Award of Merit.

Laelio-Cattleya Moloch (L.-C. St. Gothard × L.-C. Sargon).—This is a large-flowered hybrid with sepals and petals of great substance. The flowers are shapely and a fine combination of purple-mauve and old gold. Shown by Messrs. H. Alexander, Ltd.

Groups.

Messrs. H. Alexander, Ltd., contributed a fine group of well-grown plants, all pleasingly arranged over deep green moss. There were beautiful examples of Laelio-Cattleya Queen Mary var. Brilliant, with three wonderful flowers; L.-C. Moloch, L.-C. Perseus, L.-C. Ishtor, L.-C. Fame, with four handsome blooms; Brasso-Cattleya Ursula, carrying a pair of enormous, mauve-purple and gold flowers; Cattleya Fabia in variety; the white-petalled C. Princess Royal, the gorgeous C. Cappei var. Charlesworthii, C. Portia, Westonbirt var., with a spike of ten lovely blooms; Cypripedium Boltonii, C. Actaeus-Bianca, C. Argo-Fairrieanum, and the bold C. Neleus.

The group arranged by Messrs. Sanders included a number of examples of Oncidium tigrinum, the fine Cattleya ardentissima, C. Princess Royal, Laelio-Cattleya Luminosa var. Primrose, Cypripedium The Queen and a number of interesting plants of botanical interest. These last were Catasetum viridiflorum, Dendrobium sanguinolentum albens, Oncidium bicallosum, Coelogyne speciosa, Paphinia cristata, the rare Galeandra Devoniana, Bulbophyllum Medusae, Cirrhopetalum Micholitzii, Bulbophyllum Careyanum, and, in the front row, a number of Pleiones.

Messrs. Cowan and Co. submitted a group of Cypripediums associated with Brasso-Cattleya British Queen, Cattleya Daedalus in variety, C. Mrs. Medo, C. Portia, Appleton's var., and the lovely golden C. Mimosa. Among the Cypripediums those that attracted us most were C. insigne Sanderae, C. Elatior var. Rex, C. Thalia var. Mrs. Wellesley, the very fine C. Ponticus, C. Royal George, C. Yadie and C. Mortello. A fine plant of Masdevallia macrura, with six flowers, and the interesting Acampe papillosa were also included in this exhibit.

The quaint little Ornithidium Sophronitis with its tiny red flowers was conspicuous in the small exhibit from Mr. Harry Dixon; the other plants were Cypripedium insigne Sanderae, C. Monitor, and the old C. Spicerianum.

Some beautiful Odontoglossums were shown by Messrs. Charlesworth and Co., the principal sorts in their group being lovely forms of O. crispum, O. Ascania, O. Reve d'Or, O. Clydonia, O. Alvara and the new, chocolate-red O. Eudora. Other good things were Brasso-Laelio-Cattleya Camara var. pulchra, with golden-bronze flowers, Odontonia Pittae var. Rosina, Dendrobium Phalaenopsis alba and Vuylstekeara Leda.

F. J. Hanbury, Esq. (gr. Mr. Farnes), Brockhurst, East Grinstead, showed Laelio-Cattleya Profusion, wlih a superb spike of five splendid flowers; L.-C. Sunbelle var. Sunset, and Odontoglossum Toreador, Brockhurst variety. Messrs. J. and A. McBean also showed a fine form of L.-C. Profusion and Brasso-Cattleya Dinestor (C. Dinah × B.-C. Nestor).

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Lady Beatrix Stanley, Mr. Wm. Howe, Mr. J. M. Bridgeford, Mr. D. Ingamells, Mr. Hugh Dickson, Mr. Courtney Page, Mr. A. E. Vasey, Mr. W. B. Gingell, Mr. J. T. West, Mr. D. B. Crane, Mr. Charles E. Pearson, Mr. G. W. Leak and Mr. W. Cartwright (Secretary).

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. Charles T. Musgrave, Mr. T. Hay, Mr. A. Bedford, Mr. E. H. Wilding, Hon. Henry D. McLaren, Sir William Lawrence, Bt., Mr. E. A. Bowles, Mr. L. R. Russell, Mr. W. B. Cranfield, Mr. G. Yeld, Mr. F. G. Preston, Mr. G. Reuthe, Mr. W. J. Bean, Mr. R. C. Notcutt, Mr. W. G. Baker, Hon. Vicary Gibbs (visitor), Mr. A. W. Exell (visitor), and Mr. N. K. Gould, (Secretary).

Awards of Merit.

Chrysanthemum Daphne.—This is a large-flowered Single with several slightly irregular rows of rosy-mauve florets.

Chrysanthemum Pax.—A Japanese variety of considerable value as a cut flower and for conservatory decoration. The round flowers are made up of stout, white florets which have much substance. The undeveloped florets in the centres of the blooms are attractively tinted with creamy-yellow. Both varieties were shown by Mr. H. Shoesmith, Junr.

Cotoneaster aldenhamensis? Forrest?—We believe this hardy, berried shrub was shown quite recently when it failed to receive an award. There seems to be doubts as to the correctness of the name and its origin. It is a robust shrub, of spreading habit. The smallish leaves are ovate-lanceolate, entire, shining green above and paler below. The young stems are reddish. The clusters of small bright red berries are borne in the axils of the leaves. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree.

Crinum zeylanicum.—Illustration No. 1,253 in the *Bot. Mag.* gives a very good impression of the unusual colouring of this old stove plant. The drawing shows the reddish stems and the definite band of red which runs down the centres of the white segments. The plant on view had two robust scapes of flowers which, however, did not yield the fragrance usually associated with the species. The species is a native of Tropical Asia and Africa and was introduced in 1771. Shown by Sir William Lawrence, Bt., Burford, Dorking.

Eucalyptus leucoxylon.—A number of very beautiful flowering sprays of the White Ironbark tree were shown. When fully grown this Eucalypt becomes a tall tree, better furnished with lower branches than is the case with many members of the genus. The adult leaves are narrowly lanceolate, of dull green colour, with a suggestion of greyness. The upper sides of the young shoots are coloured bright purple, while below they are green, and this definite colour marking is continued in the stalks of the leaves. The flowers, which are borne normally in twos and threes, were a beautiful pale rose-cerise colour. We understand that the flowers are usually white; this pinkish form is highly ornamental and, if it could be grown in sufficient quantity, cut sprays would be valuable for market sale. There is also a form which bears bright purple flowers. Shown by Cecil Hanbury, Esq., La Mortola, Ventimiglia, Italy.

Euonymus grandiflorus.—This Spindle Tree was introduced from Nepaul in 1824. The white flowers, which are produced usually in April, are large for the genus and slightly drooping. The fruits were also large, but not so showy as in some other species; they are lightly flushed with purple and have dull red ribs. The leaves were broadly lanceolate, entire, shining green above and sage-green below. Shown by Sir Charles Cave, Bt., Sidbury Manor, Sidmouth, Devon.

Groups.

No doubt in anticipation of the annual show of the National Chrysanthemum Society, to be held later in the week, the King's Acre Nursery Co. and Messrs. Keith Luxford and Co. set up good collections of Chrysanthemums.

Several collections of late autumn Roses included many admirable blooms. Mr. George Prince had really good vases of Ophelia, General MacArthur, Mrs. Henry Bowles, Mrs. Herbert Stevens, Madame Edouard Herriot and Golden Ophelia. In the group from Mr. J. H. Pemberton we noted Nur Mahal, Dorina Neave, Joanna Bridge, I. Zingari and The Adjutant as being especially meritorious.

An attractive display arranged by Mr. Amos Perry contained goodly spikes of Lilium Wallichianum, L. ochraceum, Schizostylis coccinea and the pink variety, Mrs. Heggarty, Gentiana sino-ornata and a number of interesting little hardy Cyclamen species and varieties. Messrs. Isaac House and Son again showed excellent flowers of their Scabiosa caucasica varieties, and included Kniphofias, Heleniums and dwarf Michaelmas Daisies.

In their well-arranged group, Messrs. L. R. Russell, Ltd., displayed Pyracantha Lalandei, a large quantity of well-berried little bushes of Skimmia fragrans, Pernettya mucronata and Ceanothus Gloire de Versailles. A well-arranged rockery made by Mr. F. G. Wood was planted with appropriate subjects, and he also displayed Schizostylis coccinea and the pink variety Mrs. Heggarty, Ajuga multicolaris, and a number of shapely little Conifers. The Misses Hopkins also had a tastefully arranged little rock garden.

Carnations of good quality were shown. Messrs. C. Engelmann, Ltd., included bright blooms of Spectrum, with Dainty, White Pearl, Janet and other varieties. The chief sorts displayed by Messrs. Allwood Brothers included Laddie, Red Laddie, Shot Silk, Edward Allwood and Maud Allwood, and they also staged bowls of Dianthus Allwoodii. There were three good collections of Sweet Violets. Mr. Baldwin Pinney included a good amethyst-coloured variety named Tina Whitaker. It is said to have originated in Sicily and to be an exceptionally good winter-flowering variety. The flowers are single, borne on stout stalks, and are unusually large. Mr. J. J. Kettle showed the varieties Princess of Wales and Princess Mary, while Mr. F. Rich had Mrs. Lloyd George and the compact, single pink Rosine. Mr. John Klinkert had a considerable Topiary collection.

The chief paintings were a collection of prairie scenes and flowers of western Canada and of English gardens by Miss E. S. Ough, floral studies by Mrs. Henry Spencer, and garden scenes by Miss Ellen Warrington, Miss Eva Kirkpatrick, Miss A. Spark, Miss Fielding and Miss Ethel Andrews.

Fruit and Vegetable Committee.

Present: Mr. Joseph Cheal (in the chair), Mr. William Poupart, Mr. E. A. Laxton, Mr. J. Wilson, Mr. A. W. Metcalfe, Mr. A. Poupart, Mr. P. A. Tucker, Mr. W. H. Divers, Mr. T. Pateman, Mr. E. A. Bunyard and Mr. A. N. Rawes (Secretary).

There were seven seedling Apples before the Committee, but none was considered any advance upon existing varieties. One from Mr. F. S. Wilcox, of Buston, Northampton, and of unknown origin, was much after the style of Blue Pearmain, being a tall, firm, crimson-striped Apple. This Apple is said to keep well until March. Another seedling Apple was sent by Mr. A. W. Hyde, of Kilkenny, for the opinion of the Committee. The sample of fruit was much past its best.

Mr. E. F. Grey-Clark, of Flancote, East Grinstead, showed a seedling Apple of unknown parentage, the sample being large and brightly striped, but of no particular quality. The fourth, entered as a "non-commercial Apple," was Woolbrook Russet, from Messrs. Stevens and Son, Sidmouth, Devon, appeared the most promising. It was raised from a cross between Bramley's Seedling and King's Acre Pippin. The fruits are large, flat, rather uneven, similar in this respect to Bramley's Seedling; with the dull brown flush typical of the other parent, it is said to be in season from September to April. It is regarded as a dual-purpose Apple, being fit for dessert in April and said to cook splendidly. The Committee asked to see this Apple in the New Year.

Another seedling Apple, from Mr. V. Manders, King's Lynn, Norfolk, was of the Allington Pippin type. The sample varied in size somewhat, but was generally attractive and of quite fair quality, though not of sufficient improvement on existing sorts to merit recognition.

Mr. J. Coveney, Bearslid, Maidstone, showed three fruits of a seedling Apple of unknown origin. It is said to grow much after the style of Bramley's Seedling, but the tall, yellowish and flushed Apples are not of the type likely to find favour with the gardener or commercial grower. Yet another seedling, said to have been raised from a New Zealand variety, appeared above the usual standard of seedlings (which are mostly decidedly inferior to standard sorts). The fruits are brightly striped with red over yellow, evenly round and firm.

Groups.

Messrs. George Bunyard and Co., Maidstone, staged a remarkably fine lot of Apples and Pears. Over two hundred varieties were tastefully displayed, and in no single case was the quality below first-class exhibition standard. Such an extensive exhibition is seldom seen on the show table, and probably not since the war has this firm—noted for its Apples and Pears—staged such a wonderful exhibit. Many of the varieties were little known to the public, but as arranged in this exhibit each appeared to show some good quality. Outstandingly good dishes—or rather, baskets—were:—Apples: Mother, Cutler Grieve, Lord Burghley, Crawley Beauty, Ellison's Orange, May Queen, Sturmer Pippin, New Bess Pool, Ribston Pippin, and Ben's Red. The two comparatively new Apples, Monarch and Upton Pyne were shown in excellent condition. Among the Apples rarely met with we noticed Farmer's Seedling, Chatley's Kernel, Wismer's Dessert, Maltster, King Harry, Stark, Nancy Jackson, Loddington Pearmain, Lord Castlereagh and Wilson's Prolific. Among the Pears, the baskets of Beurré de Naghin, Josephine de Malines, Beurré Six and Santa Claus were prominent. Brightly-coloured Crabs helped to show off the larger Apples, the Purple Crab and Cheal's Crimson being very brilliant. Altogether the quality and arrangement of this splendid lot of fruit left little to be desired.

Messrs. James Carter and Co., of Raynes Park, exhibited a splendid collection of Potatos. The exhibit was tastefully arranged, and the quality of the tubers reached a high standard of excellence. Varieties exhibited included Arran Comrade, Field-Marshal, Great Scot, Edgecote Purple, Majestic, Glen Blue, Red King, K. of K., and The Bishop. All the tubers were notably clean and even in shape.

Messrs. Isaac House and Son staged a group of their Apple John Standish. The very brilliant red colouring of the fruits, and the shape, suggests a Worcester Pearmain origin. John Standish keeps in good condition until April. It may find a place in the list of commercial varieties.

Mr. Herbert Chapman exhibited a nice lot of his new Apple, Saltcote Pippin. This is a very handsome Apple, and for eating at Christmas time its delicious flavour and mellow appearance should make it a favourite. It is believed to be a seedling from Ribston Pippin.

LINCOLNSHIRE POTATO SHOW.

The Holland (Lincolnshire) County Potato Show, held at Spalding, on Thursday, October 27, surpassed all previous records, both in regard to numbers and quality. King Edward and Majestic, for which South Lincolnshire is famous, were the outstanding varieties, although Red King and Great Scot were also very prominent. There were fewer seed Potatos than usual at this show.

Among the implements, a colossal Potato sprayer, which the South African farmers saw in the district during their recent visit, attracted much attention. This machine was used with remarkable success by a prominent local farmer, and some 254 acres of Potatos which were sprayed by means of it were practically free from blight. On one stand no fewer than fifty different varieties of Potatos were shown by a local grower.

The show was opened by the Marquis of Salisbury, who said that no crop figured so prominently in British agriculture as Potatos and in no county were they seen to better advantage than in the county of Holland; while the fact that they could be cooked in one-hundred-and-fifty ways showed their adaptability to the domestic needs of all classes.

The chief trophy for ware Potatos in the class open to all England (limited to farmers occupying not more than 200 acres of land), was won by Mr. H. Roughton, of Holbeach, near Spalding, who also carried off a Challenge Bowl for ware Potatos, white variety.

The Challenge Cup for the best collection of seed Potatos was won by Mr. William Gilding, of Swineshead, near Boston. Mr. T. Wright, of Roxby, near Scunthorpe, in the north of the county, won three Cups, valued at thirty-five, twenty and fifteen guineas, respectively. Mr. B. Bass, of Holbeach, was another successful exhibitor, taking the Holland Farmers' Union Cup, value twenty-five pounds, the Gold Medal given by the Co-operative Wholesale Society, and a Challenge Bowl, all for ware Potatos.

Mr. W. H. Fuller, of Scopwick, near Lincoln, won a Cup for the variety King Edward, and Mr. J. Cook, of Weston Hills, near Spalding, a Challenge Bowl for the best collection of Potatos.

Proposing the toast of "Agriculture and the Holland Potato Show," at the luncheon, the Marquis of Salisbury provoked a laugh when he said it was pleasing to sit among a body of agriculturists and not see rows of gloomy faces—"But," he added, "I do not know how far those smiling faces conceal aching hearts!" He believed, however, that things were not quite so bad as painted. They had passed through a depressing time; moreover, the industry was faced with a great many difficulties, and it would be foolish of them not to face these difficulties; and least of all for a member of the Government to hide from himself and his colleagues the strong feeling that existed among agriculturists at the present time. There had, he said, been great changes in the industry of late years, one of which was the great increase in the wages bill. "But," said His Lordship, "I am not one of those who are in favour of low wages; I believe in high wages, and good work." He said he would greatly regret a reduction of wages, because the farm labourer had no more than was absolutely necessary for him to lead a reasonable life. There was, however, a certain spirit abroad in the country which looked upon work as a necessary evil.

That was a profound mistake. From the highest to the lowest, they should strive to give of their best, which was their duty to their country. Alluding to the great increase in the cultivation of Sugar Beet, the Marquis of Salisbury said that this augured well for the future, inasmuch as it showed that energy and enterprise were still the characteristics of those engaged in agriculture. New Sugar factories were springing up in face of the diminishing subsidy, which showed that the industry was on firm foundations, and that it was likely to live when the subsidy had finished.

EGHAM GARDENERS'.

On Wednesday, October 19, Mr. Theodore Parker, of the Abol - Research Laboratories, gave an interesting lecture to the members of the Egham and District Gardeners' Mutual Improvement Association, on "The Principles of Tar Oil Winter Washing for Fruit Trees."

The lecture, which was well attended, was illustrated by lantern slides. Photomicrographs, prepared by the lecturer, were shown of insects' eggs, exhibiting the typical effects of tar oil sprays. The favourite hibernating quarters of various pests were also shown, and glass plates that had been previously coated with wax and sprayed with a wash containing varying percentages of soap and spreaders, were shown to illustrate the importance of overcoming the natural resistance of the egg cover.

The older methods of winter washing were discussed and their advantages and disadvantages explained. Proceeding, Mr. Parker stated that until about three or four years ago it was considered in this country that any chemical which could be used effectively for the destruction of insect eggs would at the same time be detrimental to the tree on which they had been oviposited. As a result of extensive trials carried out during the past two or three seasons it had been demonstrated that the use of the so-called tar oil washes for insect egg destruction must now become a recognised part in the routine of horticultural practice.

Undoubtedly the most suitable time to attack a pest is in its egg stage; it is then stationary and therefore more "get-at-able" and a higher concentration of wash can be used without risk of damage to the tree. Some of the pests to which fruit trees are subject lay their eggs during the autumn on the twigs and branches, where they hibernate over the winter, and, given an unhindered career, hatch out with the advent of spring, coincident with the bursting of the blossom and leaf-buds. It is characteristic of most insects that they deposit their eggs in such a position that when the young emerge they have not far to travel in search of their first meal, hence growers are accustomed to keeping a sharp look-out for certain "undesirables" so soon as the buds begin to open. With the use of the new class of "dormant sprays," although perhaps high in initial cost owing to the concentration at which they must be used, it has been shown that one such spray applied thoroughly means the saving of at least two or three sprayings during the subsequent season.

Experience has shown that all oils do not necessarily possess egg-killing properties, but research has proved that by a suitable selection and blending of oils it is possible to produce a product which possesses to a high degree this desired property. Such blending greatly assists standardisation of the wash.

Having secured the right type of oils, the next problem is to convert them into a water-miscible form. In all spraying operations the carrying medium is water, and it is only too well-known that the softer the water the better for purposes of efficient spraying. As oils do not mix or dissolve in water emulsification is necessary. This process consists of breaking the oils up into microscopically fine particles and surrounding or coating them with a material known as a protective colloid. The function of this material is to prevent the oils from coalescing when they become suspended in water as a milky-white emulsion.

It has been demonstrated than an emulsion may be so good as to be partially ineffective as an insecticide. In other words, the emulsion becomes colloidal in character. This means that the oil globules are ultra-microscopically small and when added to water produce instead of a thick, creamy fluid, an opalescent solution. In this form it possesses greater spreading properties than is actually required, and instead of thickly coating the egg, runs off, leaving only a very thin film, insufficient to cause the breaking down of the egg coating or shell.

Insect eggs have a very resistant natural covering which is more or less impervious and which makes it difficult to completely envelop them when sprayed. Certain oils possess the necessary properties for this and in order to secure the right degree of spreading it has been found essential to produce an emulsion which will spread sufficiently, at the same time leaving the requisite quantity of oil on the egg surface.

Although no definite experimental proof exists, it is believed that the film of oil left actually kills or prevents the eggs from hatching, as follows:—(1) By causing a gradual disintegration of the chitinous tissue of which the egg shell is composed, which exposes the contained protoplasm; or (2) by being gradually absorbed by the chitinous tissue, thereby coagulating the egg protoplasm; or (3) by the action of capilliary attraction the oils, gain access to the interior of the egg through the microscopically small air holes in the shell, causing coagulation as in (2); or (4) by coating the shell the newly emerged insect, in breaking through, consumes a portion of the oil sufficient to cause death.

Providing tar oil is used during the absolute dormant period, no detrimental effects upon the tree are likely to occur. On the contrary, these washes appear to produce an emollient effect, slightly softening the bark and at the same time stimulating growth.

Apples may be sprayed so late as the end of February or beginning of March, depending entirely upon the forwardness of the season. Plums should be sprayed not later than December or early January.

Mr. Parker advised growers to spray when the trees or bushes are dormant; use as high a pressure when spraying as possible, 170 lbs. to 200 lbs. per square inch nozzle pressure, as this assists the spreading and penetration of the wash, and helps to overcome the natural resistance of the eggs; spray in fine weather but not during frost; not to use tar oil washes under glass for vine rods or Peach trees, as fumes may eventually be given off by the spray under the action of sun-heat, which might produce a scorching effect upon any young foliage; and to thoroughly wash out the tanks, hoses, and spray lances after use, as all tar oils are likely to cause corrosion of rubber and leather in course of time. He stated that cattle may be grazed upon grass after the trees have been sprayed without any risk of poisoning.

Following the lecture an enthusiastic discussion took place in which the lecturer was bombarded with questions. In reply to these Mr. Parker said that he was of the opinion it might be best to use tar oil wash one year and lime-sulphur wash the next. The fact that the eggs of red spider appeared to be unaffected by this class of wash was interesting, and the increase of this pest since the introduction of tar oil washes might be explained by the fact that we were destroying a predaceous parasite which originally held the spider in check, but which had been killed off as a result of washing.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

The second international exhibition commemorating the Centenary of the Société Nationale d'Horticulture de France was opened by the President of the Republic on Friday, October 28, in the Cour la Reine. Lt.-Col. Durham, Secretary of the Royal Horticultural Society, presided over the International Jury, whilst Sir William Lawrence returned thanks at the banquet in the Society's hall, Rue de Grenelle, on behalf of the Jury and Great Britain. The international character of the exhibition was not pronounced; there was one English exhibit, and Poland, Belgium and Holland were also represented.

The outstanding features of the exhibition were the superb fruits and the magnificent group shown by MM. Vilmorin, Andrieux et Cie.

A large number of firms showed fruits, but the exhibit of the Société d'Horticulture de Montreuil was outstanding, the Pears being remarkable, especially Beurré Diel, Doyenné du Comice, and Charles Ernest, and amongst the Apples, Linneaus Pippin, Reinette du Canada and Calville Blanc. Other fine collections came from MM. Croux et Fils, Moser et Fils and Nomblot-Bruneau; very fine specimens of the Pears Passe Crassane, Conseiller à la Cour and beautifully-coloured Doyenné de Mérode were to be seen in each of these groups. While the Pears surpassed anything seen in England, the Apples, on the whole, fell far below the English standard, most dishes containing spotted and malformed fruits. The three firms mentioned also showed collections of fruit trees, trained and pruned with marvellous skill.

Grapes, as shown in England, are not grown in France, but there were interesting displays of beautifully-coloured Chasselas Grapes from the Gironde district, especially those grown in the neighbourhood of Agen.

An exhibit in this section which specially interested the President of the Republic was one of Walnuts, shown by M. L. Treye, of Trévoux. The procedure consists in grafting late-flowering varieties, such as the Mayette, Franquette, and Parisienne of Dauphiny, and the Corne of Périgord on the American Walnut (Juglans nigra). Such trees do not suffer from late frosts, are not subject to Armillaria mellea, and begin to fruit from the second year.

MM. Vilmorin's group consisted of an immense sunk garden which could be viewed from a semi-circular bay. It was entirely planted with Chrysanthemums in groups of colours and varieties, and occupied the whole of the centre of the exhibition, while on the outside of the gangway ran pergolas, with the vegetable exhibits of the firm, backed by large specimen Chrysanthemums trained in the Japanese manner. This exhibit received the highest awards, including the Sévres Vase presented by the President of the Republic, and the Gold Medal of the Royal Horticultural Society. At the same time, while the *coup d'oeil* was delightful, the individual flowers and plants were not up to the English standard, and this applied to the exhibits generally.

M. Louis Ferard had constructed a *tour de force*, consisting of a stream, bordered with Ferns, which ran between high banks of small-flowered Chrysanthemums in bud and flower. By means of a sheet of plate-glass the group was continued outside the tent and became more alpine in character.

Good groups containing Chrysanthemums and vegetables were shown by M. Georges Truffaut, and by the Ecole Municipale de Paris. MM. Caveux et de Clerc were both on the Jury, and consequently their fine groups of Dahlias were "hors concours."

Orchids were very pleasantly shown in a greenhouse. There were very few novelties, but well-grown plants were staged by MM. Marcoz, Maron et Fils, Perrin and others. Fine spikes of Phalaenopsis Rimestadiana were much admired.

The Société is to be warmly congratulated on the show, the success of which is largely due to the Secretary General, M. A. Nomblot, and his colleague M. Leon le Clerc.

ORCHID CLUB.

The second domiciliary meeting of the Orchid Club was held on October 22. In the forenoon, the collection of Dr. Craven Moore was inspected and the methods of cultivation were explained. In the Odontoglossum range a small group of plants were in full spike, viz., hybrid O. crispums and xanthotic crispums, together with a beautiful batch of Oncidium cheirophorum.

In the Cypripedium range there were several hundreds of plants in flower, including about one hundred examples of C. Maudiae magnificum and the especially fine C. Maudiae Bank House var.; others calling for special note were: C. Madame Albert Fevrier, in several varieties; a fine form of C. insigne Royalty, C. Chrysostum vars. Chardwar, Lord Lambourne and H. J. Elwes; C. Viking, C. Nirvana, C. Monialis var. Hilda Sharp, C. Redstart, C. The Major, several good forms of the highly-coloured new hybrid C. Memoria J. H. Walker, and three plants of C. Fairrieanum, with about a dozen flowers, this beautiful species appearing to grow quite luxuriantly in a compost containing limestone in the lower half.

The extensive collection of seedlings was a centre of special interest. In the several houses there is an interesting collection of fly-catching, insectivorous plants, grown for their utility as well as their intrinsic interest.

In the afternoon, the members visited the Daisy Bank collection of Mr. B. J. Beckton, where they had the opportunity of inspecting an entirely different aspect of Orchid culture. In Mr. Beckton's collection species are the dominating feature, together with a selection of fine Miltonias and Cypripediums. Among the species in flower were Vanda Sanderiana, with a spike of eight flowers; Angraecum Ellisii, A. Scottii, A. Chailluanum and A. Kirkii; Coelogyne Veitchii, C. fuliginosa and C. speciosa alba; Cirrhopetalum miniatum, C. gracillimum, C. campanulatum, C. Mastersianum, Mundham var., and C. ornatissimum, the latter having eleven spikes. Eria macrantha carried seventeen spikes, and several other rare and interesting genera and species were noticed.

The General Meeting was held at Daisy Bank during the afternoon, when the Officers and Committee for the season 1927-8 were elected. Sir William Thom was elected President of the Club.

In view of the special interest and value of domiciliary meetings and the great success of the Club's meeting at Bodnant, North Wales, in June last, by the kind invitation of Lady Aberconway, it was resolved that this type of meeting be continued from time to time, and that the exhibitions of plants in Manchester be proportionately reduced.

GLASGOW AND WEST OF SCOTLAND.

At a meeting of the Glasgow and West of Scotland Horticultural Society, held recently, Mr. S. Williams, M.Sc., Ph.D., of the Botany Department, Glasgow University, delivered a lecture on "Insectivorous Plants," illustrated by lantern slides, and by a small group of plants supplied by Mr. Banks, Superintendent of the Botanic Gardens.

At the outset, Mr. Williams briefly discussed the sources (atmosphere and soil) through which plants obtained their food and emphasized the need for nitrates, which was closely associated with the lecture, because practically every insectivorous plant lived in boggy or wet soil that was deficient in nitrates, and he showed by means of the Pitcher Plant and the Fly Trap, that they found a substitute in insect diet. He afterwards explained the remarkable mechanism provided for the capture and retention of insects, and the way the plants absorbed and digested the bodies they had captured. Under the former head three types were discussed, viz., adhesive, active movement and definite receptacles, while under the latter section attention was devoted to the operations of the glands. On the motion of the Chairman, Mr. Thomas Dagg, a hearty vote of thanks was accorded to the lecturer.

The exhibits consisted of a group of Michaelmas Daisies from Mr. J. G. Roberts, Barrhead, and seedling Chrysanthemums, which received the following awards:—First Class Certificate, Mrs. John Wilson; Certificate of Merit: The Provost, Primrose Gem and Mrs. John Scally. With the exception of the last variety, raised by Mr. Alex. McAlpine, Tollcross, the blooms were shown by Messrs. Torrance and Hopkins, Busby. Mr. McAlpine also showed nineteen varieties of Chrysanthemums, the plants of which had been raised from seeds sown in spring.

BIRMINGHAM AND MIDLAND GARDENERS.'

At the fortnightly meeting, held at the Chamber of Commerce, on Monday, October 24, Mr. J. Smith presided, and a lecture was delivered by Mr. J. Woolman, Shirley, entitled "Some Notes on Chrysanthemums."

The room was crowded, and several members were content with standing room only.

After touching briefly upon the history of the Chrysanthemum, the lecturer dealt with its cultivation and propagation, the composts to use at various stages, temperatures, feeding and top-dressing, stopping and timing of buds; the good qualities and also the defects of the various sections were referred to. Three new Japanese varieties that appear to have a useful future were introduced to the company, viz., Birmingham (crimson), Southampton (pink), and Derby (pale yellow).

Obituary.

John Kay.—We regret to record the death, on October 27, of Mr. John Kay, who retired from the service of Messrs. Hurst and Son eighteen months ago. Born in 1851, he served his apprenticeship with Messrs. F. and A. Dickson, of Chester, and in 1874 joined the staff of Messrs. Hurst and Son, with whom he spent the remainder of his business career, eventually becoming manager of the firm's Clover Seed Department. He was a well-known figure in the Seed Market at Mark Lane, and considered an excellent judge of agricultural seeds—his opinion was highly valued and he was much sought after as an arbitrator. The funeral was held at Golders Green Crematorium on Monday last. In addition to relatives and personal friends, it was attended by a number of representatives of the seed trade. Amongst those sending wreaths were: Mr. and Mrs. J. A. Kay, Mr. and Mrs. Cathcart, The President, Council, and Members of the Agricultural Seed Trade Association, Messrs. William and Edward Sherwood, Office Staff of Messrs. Hurst and Son, Butler Street Staff of Messrs. Hurst and Son, Mr. A. Rousset, Mr. N. Van Lessen, Mr. J. E. Paton, Mr. G. O. Miln, Mr. Horace Burlingham, Mr. T. Pinches, Mr. A. Frankish, and The Directors and Staff, Transport (1910), Ltd.

ANSWERS TO CORRESPONDENTS.

Late-flowering Gladioli.—*H. T.* Your enquiry is the first of its kind to reach us within our recollection. The corms would certainly have to be carefully selected, potted up about the first week in June, and started in a semi-shaded place and carefully watched. We suggest that in the first instance you make enquiry of one or two of the well-known English growers, and failing them, write to Messrs. Errey Brothers, Camperdown, Victoria, Australia, for a copy of their catalogue, and order what you want immediately on its receipt. The corms should then reach you about the end of May. Their own introductions are moderate in price and, such of them as we have seen, good. The Quartinianus hybrids might be useful for your purpose, but of those we know the prices are rather high. We believe Indian Summer was the first of these to maintain its name in the American catalogues, but it was quoted at one dollar per corm last spring. This variety did not bloom in the south of England until the middle of October when planted in the open at the ordinary time. As to varieties—as we have no experience of the actual production of flowers over the time you mention we are not in a position to recommend, but if you decide on trying any Australian sorts, we shall be pleased to give our opinion on receiving from you a list of varieties you wish to select.

Lavender Plants Dying.—*F. D.* It is quite probable that your Lavender plants have been killed or weakened by exposure during the winter time. The dwarf form of Lavender is more subject to injury during the winter than the taller-growing kind, and it is not unusual for plants in their first and second years to die. Older plants withstand severe weather better. As a rule Lavender thrives on comparatively poor soil, although the best results are obtained on loamy soils. If your plants are exposed to strong, salt-laden winds that may very well account for them dying after being established for a year or two.

Names of Fruits.—*H. C. T.* Gooseberry Apple.—*M. L.* 1, Allington Pippin; 2, Wadhurst Pippin; 3, Hollandbury; 4, Chelmsford Wonder; 5, Edward VII; 6, Fish's Pippin.—*H. B. O.* 1, Jalousie de Fontenay; 2 and 4, Comte de Lamy; 3, decayed. — *Altho.* Apple Bowhill Pippin; Pear Beurré Superfin.—*A. C.* 1, not recognised; 2, Bramley's Seedling; 3, Emperor Alexander; 4, Brabant Bellefleur.—*L. G. S.* Melon Apple.—*H. W.* 1, Newton Wonder; 2, Dean's Codlin; 3, Reinette Franche; 4, Small's Admirable; 5, Domino; 6, French Crab; 7, Scarlet Golden Pippin; 8, Fearn's Pippin; 9, Hambling's Seedling; 10 and 11, Dumelow's Seedling; 12, Margil; 13, Hormead Pearmain; 14, Bramley's Seedling.

Names of Plants.—*J. S. B.* Nerine Bowdenii, of which there are now several varieties in cultivation.—*A. P.* 1, Centranthus ruber; 2, Origanum hybridum; 3, Erigeron mucronatus; 4, Linaria repens; 5, Artemisia sericea; 6, Zauschneria californica; 7, Scolopendrium vulgare.—*Dr. A.* 1, Catananche coerulea; 2, Salvia recognita; 3, Caryopteris mastacantha.

Oxalis for Identification.—*Valley.* The Oxalis is O. incarnata, of Jacquin, and comes from South Africa. It is not likely that seeds of it can be obtained anywhere in commerce. O. incarnata may be increased by growing it in pots or boxes in a greenhouse from which frost is just excluded. Perhaps it would grow most rapidly in a box of rather sandy soil, on which the bulbils of the stem could drop when mature, or the bulbils could be picked off in autumn and planted separately. The bulbs at the root could also be separated in spring and planted out just under the surface. In this country O. incarnata is grown in gardens but more often in the windows of dwelling-houses.

Perennial Buttercup in Lawns.—*H. B.* There are three perennial Buttercups common throughout Britain, and two of them may be very dwarf in lawns, namely, Ranunculus repens and R. bulbosus. The former creeps like a Strawberry, and the latter has a tuberous root, like a corm. Lawn sand will kill the foliage of either, but both will grow again owing to the large amount of reserve food in the rootstock, especially in the case of R. bulbosus. The most effective time to apply lawn sand is in April and May when the plants have used up a great deal of reserve food in the production of stems and leaves. A dry day should be selected, after the dew has been dispelled. When the weeds make fresh growth repeat the application, or use powdered sulphate of ammonia, and put a pinch into the crown of each plant. Both these weed-killers act as a fertiliser afterwards, but one application will not kill strong plants of any of these three Buttercups. If R. bulbosus is present it would be worth while using a spud to pick out the larger plants during winter, while the soil is soft and least damage is done to the grass. Autumn is the least effective time to apply a weed-killer, because the foliage is naturally dying away.

Tomato Roots attacked by Eelworm. — *C. F. D.* The Tomato plant submitted for examination has been attacked by eelworm which produces nodules on the roots. The eelworms live in the soil from year to year and will persist as an infection for next year's crop. The best method of destroying eelworm in the soil is sterilisation by steam.

Communications Received.—T. C. W.—J. S. S.—G. S.—T. E. D.—A. E. M.—T. H. C.—C. H. H.—D. G. L.—E. H. G. S.—E. R. S.—F. G. C.—C. V. D.—G. L.—W. R. J.—J. H.—F. W. O.—P. S. D.—H. A. M.—C. H.—J. M.—G. W. W. B.—H. R. D.—J. F. D.—H. T.—H. B.

MARKETS.

COVENT GARDEN, Tuesday, November 1st, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc. : Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	16 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0 15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink... ...	18 0-21 0
—yellow ...	12 0-18 0
—bronze ...	15 0-18 0
—white ...	12 0-18 0
—red	15 0-18 0
Crotons, doz. ...	30 0-45 0
Cyrtomiums ...	10 0-25 0
Erica gracilis, 48's, per doz.	27 0-30 0
— — 60's, doz.	12 0-15 0
—mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0-30 0
— — 60's, doz.	12 0-15 0
Nephrolepis in variety ...	12 0- 8 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0 5 0
—72's, per tray of 15's ...	2 6 3 0
Solanums, 48's, per doz. ...	15 0 18 0
— 60's, per doz.	10 0-12 0

Cut Flowers, etc. : Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	9 0-10 0
—cuneatum, per doz. bun ...	8 0—9 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	5 0—6 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med. „ ...	1 0—1 6
short „ ...	0 6—1 9
Camellias, white, 12's, 18's, per box	2 6—3 0
Carnations, per doz. blooms .	2 6—4 6
Chrysanthemums, per doz. blooms—	
—white ...	2 0—4 6
—yellow ...	2 0—4 6
—pink	2 6—4 6
—bronze ...	1 6—2 6
—red	2 6—4 6
— single varieties	2 6—4 6
—spray, bronze, per doz. bun.	6 0-10 0
spray, pink, —per doz. bun.	8 0-12 0
spray yellow, —per doz. bun.	6 0-10 0
spray white, —per doz. bun.	8 0-15 0
Cornflower, blue, per doz. bun.	2 0—3 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	10 0-12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Narcissus, Paper White, per doz. bun.	4 6—5 0
—Violets, Parma, large, per bun.	2 6—3 0
—Ruscus, Green, per pad ...	4 0—5 0
—Solanum fruits, per pad ...	5 0—6 0
Gardenias, per doz. blooms...	3 0—5 0
Heather, white, per doz. bun.	9 0-12 0
Lapagerias, per doz. blooms .	— —
Lilac, white, per doz. sprays ...	3 6—4 0
Lilium auratum, per doz. blooms	5 0—6 0
—speciosum album, per bun.	— 4 6
—short, per doz.	4 0—4 6
—rubrum, long, per bun. ...	3 6—4 6
—short, per doz.	2 6—3 0
—longiflorum, long, per bun.	3 6—4 0
—short, doz. blooms ...	3 6—4 0
Lily-of-the-Valley, per doz. bun.	24 0-30 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle green per doz. bun.	1 6—2 0
Orchids. per doz.	
—Cattleyas ...	36 0-48 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	1 6—3 6
—Madame Butterfly ...	2 0—4 0
—Golden Ophelia	2 0—3 6
—Mrs. Aaron Ward ...	1 6—2 0
—Roselandia ...	2 6—4 6
—Madame Abel Chatenay ...	2 0—3 0
—Liberty ...	3 0—3 6
—Molly Sharman Crawford ...	2 6—3 6
—Premier ...	3 0—3 6
Smilax, per doz. trails ...	2 6—3 0
Violets, per doz. bun.... ...	2 0—4 0

Remarks.—Chrysanthemums are still arriving in very large quantities from all sources. Disbudded blooms are more than sufficient for the present demand, and the heavy supplies of coloured bunch stuff have been difficult to clear, even at very low prices. The best sorts on offer among disbudded blooms are: White: Mrs. Roots, Blanche de Poitou, Mrs. Thorpe and Framfield White; Pink: Cranford Pink, Uxbridge Pink, Ivy Gay and Pink Profusion; Bronze: Alcalde, Jean Patterson and Bronze Consul; Yellow: Romance, Cranfordia and Harvester; Spray White: September White, Framfield White and Blanche de Poitou; Spray Bronze: Almirante, Mrs. J. Pearson and Source d'Or; Spray Pink: Mrs. Hubert and Pink Profusion; Spray Yellow: Cranford Yellow and Mrs. Adcock. More singles varieties are now on offer and consist chiefly of Phyllis Cooper, Exmouth Pink, Joan Edwards and other crimson varieties. With the exception of Lilium longiflorum, which has advanced in price since Friday last, other subjects made returns similar to last week's quotations. Carnations have increased somewhat in quantity, but the majority are in a very soft condition. Single Violets are arriving in large quantities from Cornwall, Devonshire and the south coast. Amongst Orchids, Cattleyas are more numerous than for some time past; there is also a good supply of Cypripediums to hand and prices are much easier. Some very fine sprays of Oncidiums have also been on sale.

Fruit : Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Lord Derby .	4 0—6 0
—Warner's King	4 6—7 0
—Lane's Prince Albert ...	4 6—7 0
—Bramley's Seedling ...	4 0—9 0
—Other cookers	3 0—5 0
—Cox's Orange Pippin, ½-sieve	6 0-15 0
Apples, American—	
—York Imperials, per barrel ...	33 0-36 0
—King David, per case ...	14 0-16 0
—Jonathan ...	16 0-18 0
—Oregon Newtown	18 0-21 0
—Newtown Pippin	— 13 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½ barrel ...	25 0-32 6
—Ribston Pippin, per barrel ...	25 0-26 0
—Blenheim Pippin, per barrel	25 0-26 0
Bananas ...	16 0-25 0
Figs, French, per box ...	1 0—1 6
Grape Fruit—	
—Blue Goose ...	27 6-36 0
—Jamaica, per case	— 20 0
Grapes, English	
—Alicante ...	0 8—1 3
—Colmar ...	0 10-1 6
—Muscat ...	3 0—6 0
—Canon Hall...	4 0—7 0
Lemons, Messina, boxes ...	24 0-45 0
Melons, each—	
—English and Guernsey .	1 6—5 0
Nuts—	
—Cobs ...	1 0—1 2
—Walnuts ...	0 4—0 8
Oranges, per case—	
—Australian Valencia ...	18 0-20 0
—Cape Valencia	21 0-26 0
Pears—	
—Calebasse ...	5 0—7 0
—Pitmaston Duchess, ½-sieve	3 0—7 0
—Conference, ½-sieve ...	4 0—6 0
—Beurré Hardy, per doz. ...	2 0—3 0
—Doyenné du Comice, per doz.	3 0—6 0
Pears, Californian—	
—Beurré D'Anjou	22 0-25 0
—Beurré Hardy, per case ...	25 0-27 0
—Winter Nelis	24 0-25 0
—Doyenné du Comice, ½-case	16 0-17 0
Pines, case ...	25 0-37 6

Vegetables : Average Wholesale Prices.

	s. d. s. d.
Aubergines, per doz.... ...	1 6—2 6
Beans, Madeira, per box ...	2 0—3 0
Beets	4 0—6 0
Carrots, per bag	4 0—5 0
Cucumbers, doz.	7 0—9 0
—Flats, 36's, 42's	18 0-20 0
French Endive, per doz. ...	2 0—2 6
—Batavia, per doz.... ...	2 0—2 6
Guernsey Beans, per lb. ...	0 6—1 0
Leeks, per doz.	1 6—2 0
Lettuce, round, per doz. ...	0 9—1 6
—French, 5 doz. crates ...	6 0—7 6
Mint, forced, per doz. ...	4 0—6 0
Mushrooms—	
—Cups ...	2 6—3 0
—Broilers ...	1 6—2 0
—Field ...	0 9—1 3
Onions—	
—Dutch ...	8 6 -9 6
—Spanish ...	13 6-15 0
Parsnips, cwt. .	4 0—5 0
Peas, Guernsey, per lb.... ...	2 0—3 6
Potatos—	
English, cwt.	5 0—8 0
Sprouts, ½-bag	3 0—5 0
Tomatos, English—	
New Crop—	
—pink	6 0—7 0
—pink and white	7 0—8 0
Old crop—	
—pink... ...	2 6—4 0
—pink and white	2 6—4 0
—white ...	2 0—2 6
—blue ...	2 0—2 6
—Jersey ...	2 0—3 0
—Dutch ...	2 6—3 0
—St. Malo ...	2 0—2 6
Tomatos—	
Canary ...	15 0-18 0
Turnips, per cwt.	3 6—4 0

Remarks.—Trade has been variable during the past week and at the time of writing general business is slow for most subjects. Hothouse Grapes are plentiful and cheap, supplies of cold-house Grapes being particularly heavy from Holland. English Apples are inclined to be easier in price after a period of good demand. The few home-grown Pears available are selling satisfactorily. Imported Apples are in fairly heavy supply, the general price levels remaining much as those quoted last week. French Beans from Guernsey are in very poor demand as the competition of Beans from France and our own large supplies of outdoor vegetables, brought along by the open weather, having reduced prices. Mushrooms remain steady in supply and demand. The Tomato trade is not quite so good, with larger arrivals from the Canary Islands available. Cucumbers are firm in price and sell freely. New Potatos from Guernsey and Scilly are not in great request. Salads sell well. The Potato trade continues firm at a good price level for the best samples.

GLASGOW.

The weather of the past week had a depressing influence on prices of cut flowers, which, in the case of Chrysanthemums, suffered a further set back. Ordinary sprays ranged from 2d. to 4d. per bunch; Phoenix and Betty Spark, 6d. to 8d.; disbudded blooms of September Glory, 8d. to 1s.; Dolores and Almirante, 8d. to 10d.; Harvester, 7d. to 10d.; Sanctity, 6d. to 9d.; Framfield White, 6d. to 8d.; La Pactole, 1s. 6d. to 1s. 9d.; Freedom and Blanche de Poitou, 1s. 3d. to 1s. 6d.; Bronze Consul, 1s. 6d. to 1s. 9d.; Pink Delight, 2s. 3d. to 2s. 6d. (12's); Bronze and Pink Consul, 3s.; and Alcalde, 1s. to 1s. 6d. Carnations made 2s. 6d. to 3s. per dozen; pink Roses, 2s. 9d. to 3s.; red, 1s. to 1s. 6d.; and white, 1s. 3d. to 2s.; Michaelmas Daisies, 4d. to 6d. per bunch; Lily-of the-Valley and Lilium Harrissii, 2s. to 2s. 6d.; and Calendula, 3d. to 4d.

In the fruit market Apples were in fair demand in view of the approach of Halloween, but the smaller imports from America kept prices firm. Canadian Baldwin, No. 1, were worth 30s. per barrel; Cranberry Pippin, 26s. to 28s.; York Imperial, 26s. to 34s.; Jonathan, 15s. to 18s. per case; Wealthy, 13s. to 16s.; and McIntosh, Red, 17s. 6d. Winter Nelis Pears, 15s. to 16s. per half-case; Beurré Hardy, 27s. per case; Brazil Oranges, 26s. to 28s.; Jamaica, 18s. 6d.; South African, 21s. to 26s.; Sunkist, 28s. to 30s.; Kippen Grapes, 3s. 6d. to 4s. per lb.; imported, black, 10d. to 1s.; Almeria, 25s. to 35s. per barrel; Porto Rico Grape Fruit, 24s. to 25s. per case; Brazil Nuts, 96s. to 100s. per cwt.; Walnuts, 88s. to 96s.; Barcelonas, 46s.; Cobnuts, 60s.; and Peanuts, 36s.; Lord Derby cooking Apples, 8s. to 9s. per bushel.

Scotch Tomatos averaged 7d. to 8d. per lb.; Jersey, 1s. to 3s. per chip; Mushrooms, 2s. 6d. per lb.; Celery, 2d. to 4d. per root; Brussels Sprouts, 8s. 6d. per 40 lbs.; English Cucumbers, 9s. per dozen; Scotch, 2s. to 5s.; Cauliflowers, 3s. to 5s. 6d.; French Lettuce, 1s. 9d.; home 1s.

TRADE NOTE.

Widespread interest has been aroused by the Onion-growing competition promoted by Messrs. Fogwills of Guildford, with their variety named Guildford Champion. Particulars of the competition were set forth in the advertising columns of this journal some months ago. More than 5,000 packets of seeds were sold to would-be prize-winners in all parts of England, Scotland, Ireland and Wales, and bulbs were received from all these countries. An inspection of a considerable number of the entries afforded ample evidence that the frequent rains and sunless days of the summer months, while favourable to growth of Onions—so far as size is concerned—was nevertheless a disadvantage when it came to harvesting the crop. Some bulbs weighed over 2 lbs., and a few nearly 3 lbs., but these were not the prize-winners, as they lacked firmness. Mrs. Farnham, The Heights, Witley, Surrey (gr. Mr. Binnington), was awarded the first prize: £4 in money and a Gold Medal; Mr. T. C. Sadler, Willinghurst, Shamley Green, near Guildford, won the second prize: £2 and a Silver Medal; while the third prize of £1 and a Bronze Medal was won by Mr. A. J. Buck Lypiat, Park Gardens, Stroud, Gloucester. We understand a similar competition will be held next year.

GARDENING APPOINTMENTS.

Mr. W. Mason for the past eight years gardener to the late Miss A. Peckover, Sibalds Holme, Wisbech, Cambridge, as gardener to P. Balmer Lawrie, Esq., The Square, Kingsley Green, Haslemere, Surrey. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. George Annand for the past eight-and-a-half years gardener to C. E. Howard, Esq., Coombe Park, Whitchurch, Oxon., and formerly at Basildon Park Reading, Berks., as gardener to Sir John Wormald, Springs, North Stoke, Oxon. (Thanks for 2/6 for R.G.O.F. Box.—Eds.).

Mr. W. Lee for the past six-and-a-half years foreman to the late Mrs. Hamilton Fellows, Tangley Park, near Guildford, as gardener to The Rt. Hon. The Earl of Ilchester, Melbury Park, near Dorchester, Dorset. (Thanks for 2/6 for R.G.O.F. Box.—Eds.).

CATALOGUES RECEIVED.

Watkins and Simpson, 27, Drury Lane, W.C.2.—Novelties and Specialities for 1928. (Wholesale).

Hurst and Son, 152, Houndsditch, E.1.—Novelties and specialities. (Wholesale).

Wm. Fell and Co., Hexham.—Forest Trees, Roses, fruit trees, etc.

Wm. Barron and Son, Ltd., Barrowash, Derby.—Trees and shrubs; Roses; herbaceous and alpine plants.

A. Luff and Sons and Thomsons, Ltd., Wimbledon Park.—Bulbs, forcing plants, etc.; general stock.

Foreign.

M. Herb, Via Trivio 24-36, Naples, Italy.—Seeds. (Wholesale).

Paul Zacharias, Ermsleben am Harz, Germany.—Seeds. (Wholesale.)

THE
Gardeners' Chronicle
No. 2133.—SATURDAY, NOVEMBER 12, 1927.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 42·6.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden. London, Wednesday, November 9, 10 a.m. Bar. 29·6. Temp. 39°. Weather, Sunny.

Autumn Coloration.

The strangely good behaviour of garden plants during the present year has already been commented upon in these pages, but the fact that it is being maintained until the end also deserves notice. When has so sunless a year approached its end in such a blaze of glory, and when has it ever been so manifest that garden plants refuse to play life's game according to what was supposed to be the rules? With plenty, and, indeed, just now too much, of water in the soil and genial autumn suns with but little power, it was to be supposed that the leaves would remain long on the trees and shrubs. In this present year, however, some do and some do not. Beech and Hornbeam which ought not yet to begin to discard their leaves, are dropping them fast, and already a Hornbeam hedge under our eye as we write has lost half its foliage, in spite of the fact that it was pruned in August—a generally sure means of preventing leaf-fall until the New Year. So also the Scarlet Oak burst a fortnight ago into brilliance, yet "held in perfection but a little moment." What shall we make of the fact that whereas the hedgerow Elms are only just beginning to grow golden, the Wych Elm is already leafless? Yet on the other hand there are trees which assumed their autumn garb weeks ago and are still wearing it. The Liquidambar, L. styraciflua, supplies an example. This lovely tree which is all too little grown, has been for three weeks now not crimson, as it is in most years, but of bright purple tint. Yet beside it are other young specimens which have not yet changed the light green of their summer dress. A like reluctance to be done with this year's life is shown by Parrotia persica, on whose leaves is yet scarcely a hint of the tawny yellowness slashed with red which is their all but unique autumnal distinctness. The Vines, likewise, and especially Vitis Coignetiae, are holding their brilliance so well that they light up the pergola fifty yards away with hard crimson flame. Like the Vine in colour is Berberis Thunbergii, but although its leaves are flaming they are falling too. There was a moment a week or so ago when by far the loveliest object was a bush of Pyrus arbutifolia—a plant always to be prized for the starry white blossom which it bears, but which came out this year in an autumn habit of soft purplish-crimson and wore it for two weeks and more—though now the glory is departed and the fallen leaves make only a pale yellow carpet on the ground. And so the chronicle of colour might be continued almost indefinitely. Stranvaesia undulata with the added merit of evergreenness is a colour subject which no garden should lack; for if it be pruned annually the plant may be kept within bounds and the vinous autumn hues of its leaves add brightness to the shrubberies when that quality is apt to be lacking. The leaves of the Dog Wood (Cornus alba) made this year a brilliant but quick descent, but on the other hand, the Amelanchiers (A. canadensis) are pursuing a leisurely path to soft loveliness of coloration. Beside all these manifestations, knowledge is mute. It can offer nothing but the slenderest of comments on the cause of autumn coloration. All it can say is that these bright tints are but the expression of lethal changes which the green pigments and other constituents of the cells of leaves undergo when life is departing from them. In that phase of incipient dissolution the cell-barriers which kept enzymes and pigments apart, break down, and so as a dying fire flickers up before extinction so the life of the leaf bursts momentarily into brilliance before it fades away. How to encourage this swan song of colour we do not know, or know but very little. Perhaps a little potash might help the leafage, as it is said to help fruits to colour, but why there should have been this year so much capriciousness and so much brilliance of autumn coloration as certainly escapes our knowledge as it delights our eye.

Bequest to The Gardeners' Royal Benevolent Institution.—The late Mr. Thomas Manning, formerly Manager to Messrs. James Veitch and Sons, Chelsea, bequeathed to The Gardeners' Royal Benevolent Institution a legacy of £100, free of duty and unconditionally. Mr. Manning had been an annual subscriber to the Institution for sixty years, and was for a long period an Honorary Auditor of its accounts.

Dutch Method of Storing Onions.—A very interesting account is given in the current issue of the *Journal* of the Ministry of Agriculture (November, 1927) of a novel method of storing Onions, adopted by the growers in the north of Holland. It appears that only the large Onions are stored, and these are set up in piles in the open field. The basis of the operation is an iron band supported on four legs; its height from the ground is two feet three inches, and the diameter about three feet. A "piler" is placed in position after straw has been laid on the ground. Around the piler a walling of Reeds is set and held in position by iron bands. The Onions are then filled in and packed carefully, the piler being raised as the work proceeds, and wires placed around the walling of Reeds. The piler may be raised a second time and more Onions filled in before it is finally withdrawn, but each time it is raised wires are placed around the Reeds to keep them in position. After filling in is finished, the Onions are covered with mats and left for a few days to settle down. Eventually, when the pile is complete and firm, a conical thatching of straw is placed on the top. The piles of Onions thus constructed are left undisturbed until the contents are required, receiving, meanwhile, the beneficial effects of sun and wind in the open field. No attention appears to be required beyond an occasional inspection, especially after storms, to see that the caps have not been damaged or dislodged. Of course, this method of storing does not give protection against frosts, and certainly not against severe frosts, but Onions can withstand a fairly sharp frost without damage, although they must not be handled under any circumstances until the frost has thawed out. The piles of Onions are often built up to a height of about five feet three inches, and when numbers of them appear in a field they present a very novel appearance. Where piles are constructed of less diameter than that stated, additional stability is afforded by means of vertical and also horizontal stakes, as guards against damage by wind. In the southern Holland islands and in Zeeland the method of storing Onions in pilers is not adopted, but large clamps are constructed, with stout wooden, upright supports, open batten sides, and thatched roofs.

Legacy to a Gardener.—Mr. Edward Till, fo Studley, Weybridge, who died on August 7, last, leaving estate of the gross value of £56,401, bequeathed £100 to his gardener, Mr. Frank Anstead.

Belgian Horticultural Paper Ceases Publication.—We regret to learn that, owing to lack of adequate support, the Belgian horticultural journal, *La Tribune des Sociétés Horticoles*, has been compelled to cease publication and will not appear again after the issue of December 21. This paper should not be confused with *La Tribune Horticole*, the only Belgian weekly horticultural journal, which we trust will continue to appear for long years to come.

Packing Chrysanthemums.—Some useful directions for the safe packing of Chrysanthemums for travelling are given in our Berlin contemporary, *Die Gartenwelt*, for November 4. The article states that blooms intended for transit should be gathered in the evening or early morning, and left standing upright in water, in a cool, dry room, especially thick or woody stems being first cleft; in gathering, the stems should be broken, not cut. In Holland, however, it is the practice to pack the blooms so soon as they are gathered; the flowers are found to be a little limp on arrival, but freshen up well, especially if placed in warm water; this method, however, is not suitable for long journeys. The flowers should be gathered either when just full blown, or a little before; well developed buds will open fully when placed in water. Show blooms must be packed separately in tissue paper; spray blooms may be placed together in bundles. They must be packed tightly enough so as not to shift in transport, and must be perfectly dry in all parts, otherwise the foliage may decay, or brown spots appear on the florets. The stems must be quite straight, not bent, and the insides of the boxes well lined with newspaper so as to exclude frost. The stems are usually tied to the bottom of the box to avoid shifting, but in very inclement weather this practice is dangerous, as frost is apt to enter through the holes. Between and under the stems stout rolls of paper should be interpolated, so that the spaces between the flowers shall be well filled, and the blooms shall not press down on to the bottom of the box, which might result in their being broken. With very choice blooms, cross pieces of wood are securely fastened over each layer of flowers, with plenty of paper packing to protect the flowers from the wood; the top layer of packing should be a little above the edge of the box, over which a good strong lid should be securely nailed. In very cold weather, when more paper is necessary to protect the blooms from frosts, extra care is needed in unpacking the cases. The flowers should not be brought at once into a warm room, but accustomed gradually to the temperature in which they are finally to stay.

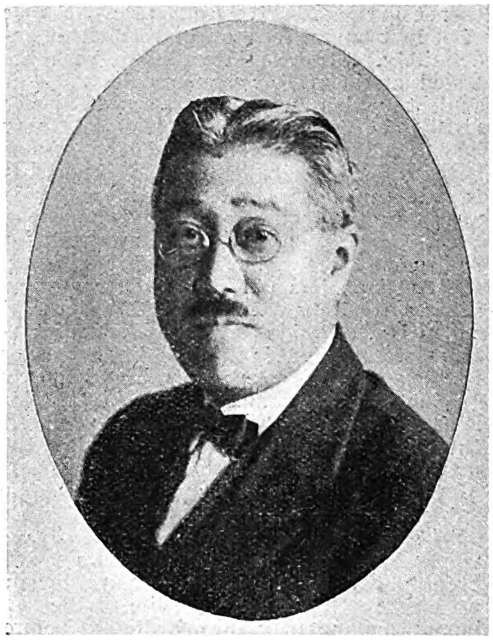
Unpublished Letters of John Ray.—Rotographs of some unpublished letters of John Ray were exhibited recently at the Linnean Society. The letters were written by Ray to the antiquary, John Aubrey, and to the Keeper of the Ashmolean Museum, Edvard Lhwyd, between 1676 and 1703; they therefore cover an important part of Ray's life, and are supplemental to the letters already edited for the Ray Society by Dr. Edwin Lankester in 1848, when they do not appear to have been available for study. It is now proposed to print them *in extenso* as an extra volume in the Ray Society's Series, together with Ray's letters to the Secretaries of the Royal Society, and with those portions of his other letters which his editor of 1848 saw fit to omit. Dr. R. W. T. Gunther will be very glad to receive information as to the whereabouts of any other unpublished letters of the distinguished naturalist.

Royal Horticultural Society's Examinations in 1928.—The Royal Horticultural Society's Examinations will be held in 1928 as follow:—Written Examinations: General Examination (Seniors and Juniors), Wednesday, March 21; Teacher's Examination (Preliminary and Advanced), Saturday, March 24; National Diploma (Preliminary and Final), Saturday, May 5. Practical Examinations.—Teachers' Examination (Advanced), Friday, June 15; National Diploma (Preliminary), Tuesday and Wednesday, June 19 and 20; National Diploma (Final), Thursday and Friday, June 21 and 22. All entries, except those for the National Diploma, should be made on the form in the syllabus, obtainable from The Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W.1.

Heavy Single-root Potato Yields.—Mr. T. Milne, 12, Rainton Road, Elmfield, Doncaster, lifted, on October 1, 24 lbs. 6 ounces of tubers from a single root of a new second-early immune Potato named Sefton Wonder. Other weights lifted on the same date in different districts were: 22 lbs. 2 ozs., by Mr. W. H. Walley, Bank Cottage, Ponsanooth, Perranwell, Cornwall; 20 lbs. 6 ozs., by Mr. R. C. Beard, 2, Railway Cottage, Llanwrtyd Wells; 19 lbs. 11 ozs., by Mr. W. Wood, gardener to Dr. Randle Leigh, Waterloo, Lancashire. Allowing that in this competition (instituted by Garden Supplies, Ltd.) each plant occupied one square yard, and taking the average yield to be 20 lbs. per root, the weight of the crop per acre would amount to over forty-three tons.

Horticultural Trade in Roumania.—The Horticultural trade in Roumania, which has had, in common with the trade of most of the central European countries, a very difficult time during the years following the war, is now making excellent progress. Profiting by past experience, growers are coming more and more to specialise in the cultivation of certain produce found to succeed well in Roumania, and there are now establishments almost solely concerned with Cyclamens, Carnations or Roses. Vegetables are cultivated on a large scale at a distance from the towns, where land is cheap and labour can be procured at the lowest agricultural wage; while growers of "primeurs," or early vegetables, can find, nearer the centres of population, a ready sale for their produce. Indeed, of these "primeurs" the demand is in excess of the available supply, and much of this early produce is imported from Asia Minor. The importation of horticultural produce and plants has assumed large dimensions; goods are sent from Belgium, England and Holland (via Danzig), the transit taking only fifteen to seventeen days. From France, the journey, which is made by water, is much slower, taking thirty to thirty-five days. The quick transit from England is largely due to a line built by the English, known as the Overland Rapid Service; it is true that freight charges by this line are heavier than by water, but the higher cost is compensated by the convenience. The trade in fruits is rapidly progressing, the demand increasing each year. In the lower Carpathians, Apples and Plums are mainly grown, while, on the plains, Cherries and Apricots are planted in large numbers and find a ready market. A certain amount of fruit is exported, and there seems a hopeful future for this trade. Cut flowers are little, if at all, grown for commerce; they are so perishable, and the market in fresh flowers so poorly organised that nurserymen do not dare to embark on so hazardous an enterprise.

Mr. S. Suzuki.—The youngest son of the founder of the Yokohama Nursery Co., Ltd., Mr. S. Suzuki, was recently appointed President of the Company in succession to his late brother, Mr. H. Suzuki, who was a great botanist and often accompanied Mr. E. H. Wilson during his travels in Japan. Mr. S. Suzuki has acquired a very extensive commercial horticultural experience; he spent several years in American nurseries, finally coming to London, where he was engaged at Messrs. James Veitch and Sons' nurseries at Feltham, afterwards entering the offices of his company at Craven House, Kingsway, prior to returning to Japan. Mr. S. Suzuki has travelled extensively in America, Europe and Japan and re-visited England a few months ago. He has a wide knowledge of Korea, where he is creating a large fruit-growing establishment in connection with his firm's products. Besides being a keen horticulturist, a seeker after novelties, and an extensive cultivator of Lilies, Mr. Suzuki is also a great lover of horses, and is seldom happier than when travelling on horse-back.



MR. S. SUZUKI.

Imperial Fruit Show.—Considerable success attended the Imperial Fruit Show held in the Belle Vue Gardens, Manchester. This was the second exhibition of its kind held at Manchester, and it was opened by the Rt. Hon. Walter Guinness, Minister of Agriculture. The Horticultural Department of the University of Reading was especially successful, winning first prizes for four bushel boxes and for four half-sieves of Cox's Orange Pippin Apple; first, second and third prizes for four bushel boxes of Worcester Pearmain; first prize for four half-sieves of any dessert variety other than Cox's Orange Pippin; first prize for four bushel baskets of Newton Wonder; and second and third prizes for four bushel boxes of Newton Wonder, being only beaten by a quarter of a point for first prize. A similarly small margin lost the first prize for four bushel boxes of Bramley's Seedling. Other awards included a Silver Cup for the highest number of points for dessert Apples packed in boxes in the United Kingdom; a Silver Challenge Cup for the best exhibit of Cox's Orange Pippin or Worcester Pearmain in the Kent and southern counties section; a Gold Medal for the best exhibit of Newton Wonder grown in the United Kingdom, and a special prize for the best packed exhibit in half-sieves. We congratulate Mr. A. J. Cobb, and Reading, upon this success.

Bulb Growing in Dublin.—Under the auspices of the Dublin Garden Window Box Guild, an interesting and informative lecture, with practical illustrations on "Bulb Growing in Towns," was delivered by Mr. J. W. Besant, Curator of the National Botanic Garden, Glasnevin, on November 4. In opening his remarks, Mr. Besant showed a keen sympathy with those who laboured under the adverse atmospheric conditions so prevalent in and around our towns. The lecturer dealt mainly with the use of Daffodils, Tulips, Crocuses, Chionodoxas and Snowdrops, but consideration was given also to Scillas, Ranunculuses, Irises (English and Spanish), all of which are too seldom seen in our gardens. It was pointed out that with due care in culture and selection, a succession of bulbs may be maintained in flower through the greater part of the year. After many useful hints on cultivation, selection of colours, etc., the meeting was thrown open to discussion.

November Flowers at Burford.—Sir William Lawrence, Bart., Burford Lodge, Dorking, writes: "The first of November was warmer than midsummer day. On a south wall, Buddleia madagascariensis is covered with sprays of scented, orange-coloured flowers, and through it grows the climbing Dahlia, Hidalgoa Wercklii, covered with scarlet blossoms. These plants will inevitably be cut down by the first sharp frost, but they grow easily from cuttings and reach fifteen feet to twenty feet in the course of a year, when planted early in May. Further along is another Buddleia, B. auriculata, a mass of small, pale-apricot flowers which exhale a strong scent of pot-pourri. In front, the 'Lily of the Field' is full of flowers of great substance, half the border being occupied by Sternbergia sicula, with narrow leaves developing before the flowers, and the other half with S. flava var. macrantha, the flowers of which are larger and later and appear before the leaves. Elsewhere are a few bulbs of the true S. macrantha, a very large species. In the same border the Teneriffe Cistus, C. vaginatus, is in full flower, as is one of several plants of Fremontia mexicana. Salvia uliginosa, sky-blue, has never been more lovely; S. involucrata var. Bethelli is at its best; S. rutilans, grown for the Pineapple-scented foliage, is in flower, as also is S. Pitierii (a doubtful name). On the east border, the scarlet and yellow Cuphea has been in flower since May, as has Mimulus glutinosus; now these are joined by Liriope spicata (green-leaved form) with its purple spikes, and Grevillea rosmarinifolius just coming into flower. Hard by grows a charming, late-flowering annual, Gilia coronopifolia, with flowers that vary from white and blush through yellow to salmon-pink and rose; they open well when cut. Nerine Bowdenii is a mass of flowers and does much better planted out than in pots. Why Amaryllis Belladonna is always a failure at Burford is a mystery; it has been tried under every conceivable condition, as suggested by successful cultivators, but rarely produces more than two or three spikes, the majority of the bulbs producing their spikes, with the leaves, in the winter and thus they become frosted. Two good winter shrubs are in full flower—Viburnum fragrans and Pyrus subhirtella autumnalis; Ceanothus Gloire de Versailles and Escallonia montevidensis still make a brave show, and the fragrant Eupatorium Weinmannianum carries quantities of snow-white panicles. There are many species of Crocus in flower, big patches of C. Tournefortii, C. ochroleucus and C. laevigatus. Cyclamen coum is just pushing up, and among Snowdrops there are Galanthus Olgae and Galanthus byzantinus "November," punctual to a day. The Colchicums are nearly over, but Colchicum Decaisnei has a few good flowers, and a similar plant, more richly-coloured, with deep-purple tube, is very handsome and is wrongly labelled C. Ritchei; C. Troodii, a minute flower, has been out for some time. Perhaps the best plant in the wild garden is Polygonum campanulatum, the flowers of which are now a deep pink; this forms a delightful group with Gentiana sino-ornata and Aster Thompsoni—the latter a first-class Michaelmas Daisy, neat of habit and carrying a succession of flowers. Clematis tangutica is full of yellow flowers and silvery seed-heads, and the Mutisia introduced from the Andes by Goethe—M. retusa glaberima—produces large, shell-pink flowers from time to time. Berried shrubs and autumn colour are another story, but everyone should secure the hermaphrodite form of Butcher's Broom (Ruscus aculeatus), which is now a mass of large scarlet berries."

Chrysanthemums in the Liverpool Parks.—Very fine displays of Chrysanthemums are now attracting crowds of visitors to the principal open spaces at Liverpool, notably Stanley Park, Sefton Park, Calderstones Park, Newsham Park and the Botanic Gardens. The educational value of these displays is recognised by teachers who may frequently be found visiting the various parks with their scholars.

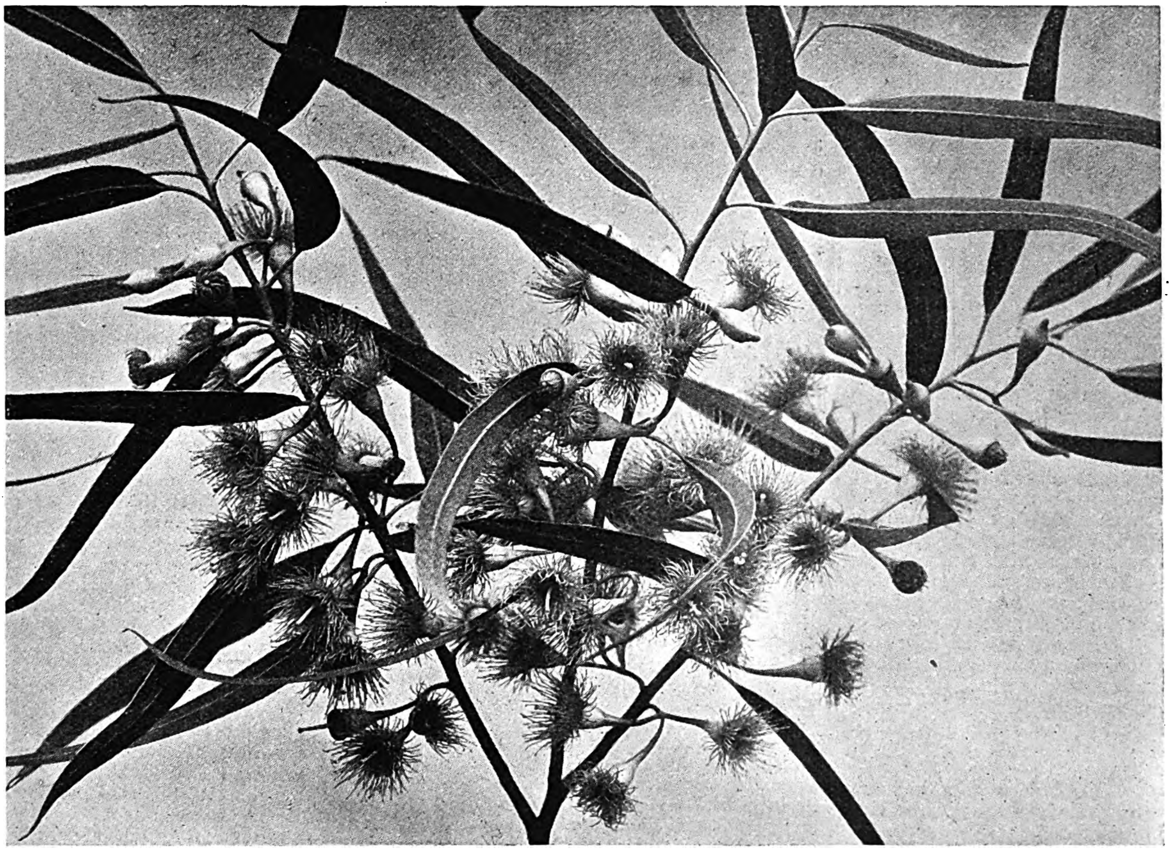


FIG. 168.—EUCALYPTUS LEUCOXYLON.

R.H.S. Award of Merit, November 1. Flowers bright pink. Shown by Cecil Hanbury, Esq., La Mortola. (see p. 372).

New Biological Buildings for Birmingham University.—The Departments of Botany, Zoology, Brewing and Bio-chemistry of Fermentation at the Birmingham University have now been moved to the new buildings opened on October 20 by Mr. Stanley Baldwin, the Prime Minister. The new buildings form part of the original design of Sir Aston Webb, and face University Road; the total cost of buildings and equipment is not less than £120,000, and towards this sum Sir William Waters Butler—an ardent horticulturist—has generously contributed £40,000, while an anonymous donor has given £5,000.

Berried Shrubs.—We have received from Mr. H. W. Hopkins, gardener at Joyce Green Hospital, Dartford, numerous branches of several useful, berried shrubs. Each specimen was remarkable for the abundance and brilliant colour of the fruits it carried; we have never seen branches so heavily cropped. The kinds submitted were Berberis polyantha, B. Fireflame, very beautiful; B. Wilsoniae, B. aggregata, almost a solid mass of coral berries; Hippophae rhamnoides, Pyracantha coccinea, P. Rogersii and Cotoneaster frigida.

Watford Horticultural Society.—At the annual meeting and dinner of the Watford Horticultural Society, the Earl of Clarendon announced that the Society would hold two exhibitions in 1928, one at Cassiobury Park, in July, and one in the Clarendon Hall, in November.

Appointments for the Ensuing Week.—Monday, November 14: National Chrysanthemum Society's Floral and Executive Committees meet; United Horticultural Benefit and Provident Society's meeting; Guildford and District Gardeners' Association's meeting. Tuesday, November 15: Royal Horticultural Society's Committees meet; Lancaster and District Horticultural Society's show; Birmingham Chrysanthemum Show (three days). Wednesday, November 16: Hull and East Riding Chrysanthemum Society's show (two days); Buxton and District Chrysanthemum Society's show; Kings Lynn Horticultural Society's show; Belfast Chrysanthemum Society's show (two days); Ayr Chrysanthemum Society's show; Royal Gardeners' Orphan Fund meeting; London Gardens Guild Lecture. Thursday, November 17: Newport (Mon.) Horticultural Society's show; Ipswich Gardeners' Association's meeting; Wallington Horticultural Society's lecture; Linnean Society's meeting. Friday, November 18: Leicester Chrysanthemum Society's show (two days); Bolton Chrysanthemum Society's show (two days); Dundee Horticultural Society's show (two days); Association of Economic Biologists' meeting. Saturday, November 19: British Mycological Society's London meeting at the University College.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Medal for Chrysanthemums.*—Our readers are aware that the Horticultural Society offered medals for Chrysanthemums, shown in sixes, at their meeting on the 2nd of this month, and that the gloomy, unfavourable weather had so entirely stopped the opening of these flowers as to prevent any varieties being shown, except a few Pompons. We are glad to announce that the Council have, in consequence of this unforeseen difficulty, agreed to give medals for Chrysanthemums at the meeting on December 7, when the growers will have a good opportunity of showing their strength. As there is to be an exhibition of autumn-flowering Heaths, table Pears and forced vegetables, on the same day, in addition, a large meeting may be expected. Exhibitors must, however, recollect that everything for competition must be in Regent Street at the latest by 11 a.m., that is to say, three clear hours before the meeting, which takes place at 2. If the plants do not arrive in time, they will run a great risk of not being received, the new arrangements for the Society's exhibitions rendering it absolutely necessary that the room should be in perfect order by two hours before the meeting, at the very latest. We have also the satisfaction to announce, for the information of the Fellows of the Society, that their much-valued special privilege of entering the Gardens of the Society on exhibition days at half-past twelve, with one friend—or of transferring the privilege to a brother, sister, son, daughter, father, mother or wife, residing in his house—has been extended, so that each Fellow, or his representative within the above-mentioned limits, may introduce two friends early, instead of one. *Gard. Chron., November* 13, 1852.

Publications Received.—*A British Garden Flora*, by Lt.-Col. J. W. C. Kirk; illustrated; Edward Arnold and Co., 41, Maddox Street, W.; price 42/- net.—*The Potato: its History, Varieties, Culture and Diseases*, by Thomas P. McIntosh; illustrated; Oliver and Boyd, Tweedale Court, Edinburgh; price, 12/6 net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Dendrobium Phalaenopsis.—Plants of this Orchid have their flower spikes well advanced, if not already in bloom; as foggy weather affects the flowers it is desirable, especially in the vicinity of towns, to have the plants in bloom early. Whilst the plants are carrying their flower spikes, a moderate supply of water at the roots is necessary, but after the blooms are removed, sufficient moisture only is required to keep the pseudo-bulbs from shrivelling. During the inactive period, an intermediate temperature will answer their requirements.

D. formosum.—This species grows well in company with the last-named, requiring an almost unshaded position and plenty of heat and moisture. D. formosum does not require large supplies of water, even during the growing season, and in winter very little moisture will suffice to keep the pseudo-bulbs from shrivelling. D. infundibulum and D. Jamesianum, two other members of the nigro-hirsute section of Dendrobiums, grow best in a cool, intermediate temperature the whole year round.

Temperatures.—The following temperatures should now be maintained for the winter months:—East Indian house, 60° to 70°; Cattleya house, 55° to 60°; Mexican and intermediate house, 50° to 60°; cool house, 45° to 50°. No harm will follow if the temperatures fall a few degrees lower for a short time during periods of extreme cold or high wind. During the next few months the heating apparatus will have to provide most of the necessary warmth in the various houses, and it should be used with discretion, for many troubles are due to faulty heating. The injurious effects of artificial heat during unusually cold weather should be, so far as possible, minimised by the admission of fresh air and the provision of moisture. The great difficulty is to balance the four great essentials—light, heat, moisture and air. The use of a moderate amount of water in damping the paths, stages, and immediately under and around the pipes will prevent that arid atmosphere which is so harmful to plant life, but damping must not be overdone, as one extreme is as bad as the other.

Economy of Heat.—In order to economise heat, it is a good practice to cover the house with canvas or lath roller blinds, which may be let down whenever necessary; these make a considerable difference to the temperature, but they should not be allowed to remain down when they obstruct the light, as light is valuable at this season. In cold, windy weather these coverings should be made secure, so that they cannot break the glass. Canvas blinds should be placed only on the warmest houses, as it often happens that on cool houses they become frozen so stiff that they cannot be rolled up for some considerable time, and many valuable hours of good light are lost. Wash the glass periodically, especially if the houses are near trees or close to large towns, as cleanliness is one of the greatest aids to good cultivation, and should be practised in every detail.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Chicory.—Lift the roots of this salad as required and twist off the leaves. Place the crowns fairly thickly together, either in boxes or in beds of soil at the coolest end of the forcing house. Do not use much heat or the blanched growths will be tough and stringy and quickly fall a prey to aphis. Keep the roots and atmosphere moist. Any dark shed will be found suitable for blanching this salad.

Other Salads.—Maintain a succession by sowing seeds of Lettuce, Radish, and Mustard and Cress at intervals in a warm house or frame, and by blanching Endives so soon as the plants are fully grown.

Broccoli.—The heads of winter and spring Broccoli should be laid towards the north by taking a trench out in front of the plants and carefully pressing them over; cover the stems with the soil taken from the next trench. This protects the stems from frost and also keeps the plants in position. Broccoli treated in this way are, in most cases, able to withstand a hard winter without much damage. If the weather is exceptionally severe later (and in very cold districts) a little dry litter or Bracken laid over the bed will make all secure.

Cauliflowers.—The latest batch of seedlings should now be pricked out into cold frames, using the lights only when weather is frosty or excessively wet.

Spring Cabbage.—Slugs appear very troublesome in this mild, wet season, therefore keep young Cabbage plants lightly dusted with old soot, and hoe between the rows so often as possible. Where the earliest plants are sufficiently large, draw a little soil up to the stems to form a slight protection against severe weather. The latest planting should now be completed. Retain unused plants in the reserve beds in case of later losses in the main crop.

Young Carrots.—Seeds may now be sown on gentle hot-beds, so as to maintain a succession of young Carrots throughout the season.

Potato Sets.—A box or so of these may be stood in a warm, light house, so as to be sufficiently sprouted by the end of the year, for growing in pots for the earliest supply.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Orchard House.—The orchard house should be cleansed at once if very early forcing is contemplated, as the time has arrived for placing the trees in position. When selecting Peaches and Nectarines for starting in November, choose trees of early varieties well set with buds, as these will respond more readily, especially if the pots are not too large and are well filled with healthy roots. Duke of York, James Walker and Duchess of Cornwall are good Peaches for early forcing; Cardinal and Early Rivers are excellent Nectarines. Cleanse each tree with soft soap and sulphur before placing it in position; keep the heads of the trees well up to the glass, but allow plenty of room for full development. Mild bottom heat is a great help in forcing, therefore it is a good plan to elevate the trees on inverted pots of various sizes (thus regulating the height of the heads), as this will permit the introduction of a larger body of fermenting leaves about them. If they were well disbudded in the spring and all superfluous shoots were removed after the crop was gathered, the trees will require very little pruning; nevertheless, some of the shoots may be cut back to triple buds about twelve inches from their origin, whilst others may require hard pruning to ensure a relay of young growth for another year. The leaders of pyramids may be shortened back, always to triple buds, but weak side shoots with only two wood-buds should be left intact until the fruits have set and young shoots are growing freely. Experienced growers are able to shorten each shoot without fear of harm, but those who lack confidence will act wisely in deferring pruning until there can be no question as to the position of the wood buds, one of which must be left at the point of each shoot.

Later Orchard House.—If not otherwise occupied with Chrysanthemums, the later orchard house may be cleansed and put into working order so soon as convenient, as the trees need not be housed before Christmas. It is not too late to re-pot trees, although earlier potting allows the roots more time to become established in the fresh compost. Maiden trees which were late in ripening may still be lifted, potted up and plunged in open borders, or, better still, placed in the lightest and most airy part of the orchard house. In the selection of Peaches, Nectarines, Pears, Apples, Plums and Cherries for potting, no second-rate variety should be considered, as it is better to have a dozen trees of one good variety than one each of a dozen poor sorts. Pears, Apples and Plums are specially suitable for cold-house treatment.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Orchards.—Although the planting of fruit trees may be carried on with success from now onwards until the end of March, weather permitting, November is the best month in which to do the work. If planting is to be done on a large scale it is advisable to push forward the work so fast as possible so that much of it may be completed before frosty weather sets in; the early-planted trees usually start into growth early the following spring, whereas those transplanted late in spring make much slower growth and need careful attention, especially if the weather should prove cold and dry. As previously stated, the site for new orchards should be carefully selected, with good drainage, and the soil suitable for growing first-rate fruits for a great number of years. The larger-growing varieties should be allowed ample room to form good specimens; indeed, fully thirty feet should be allowed from tree to tree, and the stems, worked on the wild Crab or free stock, should be quite six feet high. If the site chosen is in a somewhat bleak position, Damsons may be planted on the outer lines, from ten to fifteen feet apart, to form a screen.

Mixed Fruit Garden.—With the object of aiding any one desirous of growing mixed fruits on a reasonable space, I suggest that standard Apples be planted thirty feet apart, Plums fifteen feet, dwarf or bush Apples or Pears, seven-and-a-half feet or—instead of bush Apples—Gooseberries, and Red and Black Currants may be planted at suitable distances. Such a fruit garden, if well managed, will yield good crops for many years. Varieties of all the kinds selected should be chosen carefully and purchased from a dependable firm.

Morello Cherries.—Now that most of the leaves have fallen, pruning and regulating the branches should be completed before the cold weather sets in. If the trees have been well trained and are evenly balanced, it is not necessary to remove all the branches from the walls. Keep the heads of the trees moderately thin and spur foreright shoots back to within a few buds of the base. Put plenty of lime-rubble in the soil when planting new trees.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Canterbury Bells.—Campanula Medium var. calycanthema is a useful plant for the decoration of the conservatory or dwelling house, and where the plants have been raised from seeds sown as previously advised, they should now be placed in their flowering pots. Receptacles from seven inches to ten inches in diameter will be the most suitable; they should be clean and well-drained. Canterbury Bells will succeed in any average soil, with a little bone-meal added. When potted, place them in a cold frame, plunging the pots up to the rims in ashes. Remove the lights on every favourable occasion, using them only during wet weather and severe frosts.

Perpetual-flowering Carnations.—The perpetual-flowering Carnation is one of the most desirable plants to cultivate for producing a wealth of bloom during the winter months, and a good point in its favour is that the flowers last well in water. Plants that have been grown outside during the summer months and were taken inside as recommended in a previous calendar, should now be producing flowers in plenty. They should be assisted by frequent applications of soot-water at the roots. Provided the receptacles are well-filled with roots, an occasional sprinkling with a suitable Carnation manure will afford further assistance. Although excessive feeding is a mistake during the dull winter months, it is essential that fertilisers be applied frequently, but in small quantities, to obtain a succession of brightly coloured flowers. At this time of the year a little extra care is needed in watering, but at the same time the roots should never become dry, otherwise the blooms will suffer. Admit air both day and night, whenever the outside conditions will permit; in fact, the top ventilators should never be closed tightly, unless there is severe wind or frost. A minimum temperature of 50° is sufficient, but rather than cause too dry an atmosphere by excessive heating of the hot water pipes during times of severe frost, the temperature may be allowed to fall to 46°. Rust is often a source of trouble and is encouraged by a humid atmosphere.

Potting Materials.—It is always advisable to have sufficient potting materials in store for the winter months, such as loam, leaf-mould, peat and burnt earth. If these are stored now in an open shed the work of potting will be greatly facilitated. Failing an open shed, the materials should be protected from heavy rains by covering them with boards or felt.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Outdoor Chrysanthemums.—So soon as these pass out of flower, or have to be cleared away to make room for other plants, they should be boxed up in sufficient quantity to provide a stock of cuttings for next season. They are best wintered in cold frames, or at the foot of a warm wall.

Protecting Tender Plants.—Material should be collected for protecting tender plants. For shrubby subjects this may consist of mats of various sorts, or canvas sheeting, in a form that may be handled easily, as it should only be used when really necessary. For other subjects, cut evergreen branches are suitable; Furze branches are excellent, as also are straw and Bracken, but whatever material is used, it is of the utmost importance that it keeps as dry as possible and is permeable to air; any protecting material that lies close and wet is likely to do more harm than good. Ashes may be placed over bulbs and tender herbaceous plants. Mulching Roses and other plants with manure with the idea of protecting them from frost generally does more harm than good. Roses are best protected by drawing soil up round the base of the stems.

Rose Planting.—If Rose beds have been prepared as advised in a previous calendar, they should now be in good condition to receive the plants. So far as possible, planting should be done during November, but where circumstances may have prevented the preparation of planting sites, one need not hesitate to plant at any time during the winter and spring, provided always that the weather is open and the soil in good-working condition when planting takes place. If for any reason it is necessary to plant during the spring, the plants should be pruned back at the time of planting. When Roses—or, indeed, any plants—are received from the nurserymen, they should be unpacked at once, checked over and carefully laid in until they can be planted; if the roots are dry when they arrive, they should be dipped in water before heeling them in. Never leave the roots exposed for any length of time, for Roses, more than most woody plants, suffer quickly from root exposure; plants that arrive with their growths at all shrivelled should always be looked upon with suspicion. Strong-growing Roses should be staked.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Early Peaches.—The foliage on trees of early varieties of Peach and Nectarine has now reached maturity, and the fall of the leaves may be assisted by drawing a brush lightly along the shoots; as the trees growing under glass are protected from the autumn winds, which under outside conditions soon strip the ripening foliage, no damage follows this method. The trees should then be pruned, removing all exhausted and weakly shoots, and leaving the trees well furnished with plenty of young medium-sized growths, that were tied down during the growing season. Where the trees have reached the limits of the trellis to which they are fastened and no further extension is practicable, careful selection of the shoots must be made, removing those which have already borne fruit and cutting them back to a suitable junction, and retaining only those young shoots necessary to fill up the spaces, without shortening them in any way. So soon as pruning has been completed the branches should be carefully tied into bundles, and the house thoroughly washed down with hot, soapy water, working this into every crevice and corner where insects or their eggs may be in hiding, and afterwards swilling all down thoroughly by means of a hose pipe or garden engine. When the house has dried, the trees should be thoroughly cleansed and if red spider has been troublesome they should be washed with Gishurst compound diluted to the proper strength; rub the mixture well into every crevice and allow it to dry. The walls and brickwork should then be cleansed and given a fresh coating of lime-wash, to which may be added some flowers of sulphur. When all is thoroughly clean and dry the trees should be tied into position. The borders should then be top-dressed with good loam mixed with lime-rubble and bone-meal; in the case of well-established trees, an application of four ounces of basic slag and two ounces of sulphate of potash per square yard will prove an effective winter top-dressing.

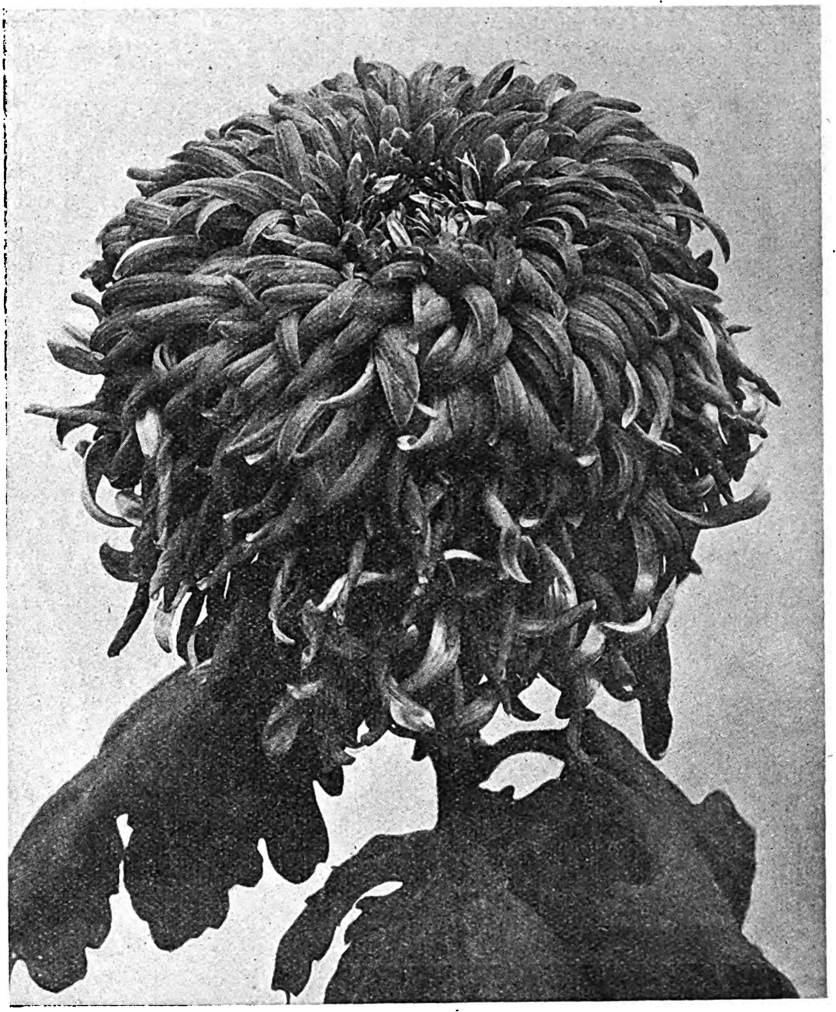


FIG. 169.—CHRYSANTHEMUM MRS. KEITH LUXFORD.
N.C.S. First-Class Certificate, November 3. Flowers chestnut-red, with golden reverse.
Shown by Messrs. Keith Luxford and Co. (See p. 393.)

Storing Bedding Plants.—Store tubers of Dahlias in any frost-proof shed or loft, where they may be examined readily at frequent intervals. Begonias should also be stored in a dry place in boxes of sand, while Gladioli, if not completely ripened, may be lifted with their foliage intact, and laid out in a sunny shed to dry off, when they should be cleaned, sorted and laid away dry for the winter. In the milder districts it is unnecessary to lift Gladioli; experience has proved that in sandy soils the corms survive the winter unharmed, and this season the bulbs so left flowered earlier than those lifted and replanted in April. On heavy, wet land, Gladioli deteriorate rapidly and should be lifted. Herbaceous Lobelias, L. cardinalis and L. fulgens varieties, may also be left in favourable places, but it is always a safe plan to lift and store a few plants in order to ensure stock for another season. Many varieties of early-flowering Chrysanthemums also survive our ordinary winters outside, but in order to provide a plentiful supply of cuttings early in March a few stools of each variety should be lifted, boxed, and kept in a cool house, such as a vinery, at rest, where they will be safe from attacks of slugs. Old bedding Pelargoniums may also be lifted, and either potted or boxed, and kept somewhat dry all the winter, as such plants provide plenty of cuttings that root speedily in heat in early spring. Calceolarias that have given satisfaction during the summer may be potted up to provide a further display in the greenhouse early next year.

ALPINE GARDEN.

THE ALPINE TOADFLAX.

Of all the Linarias, or Toadflaxes, probably the most charming in the eyes of the majority of flower-lovers is L. alpina, the Alpine Toadflax, a gem of the first water, indeed, and one held in high esteem wherever it is grown. Although it may withstand the winters in certain districts and in the milder parts of the country is a true hardy perennial, in a great proportion of gardens it is best treated as an annual. I was much interested to observe that the late Mr. Farrer appears to have found it tender in Yorkshire, as, in an old catalogue of his nursery at Clapham in that shire, he listed it as a "self-sowing annual." In my own case, north of the Tweed, and in a mild part, I have found it perennial in regard to withstanding the effects of average winters, but it succumbed when these were severe, so that it was necessary to raise plants frequently from seeds or, in the case of the better forms, to strike cuttings and keep these in a frame during winter.

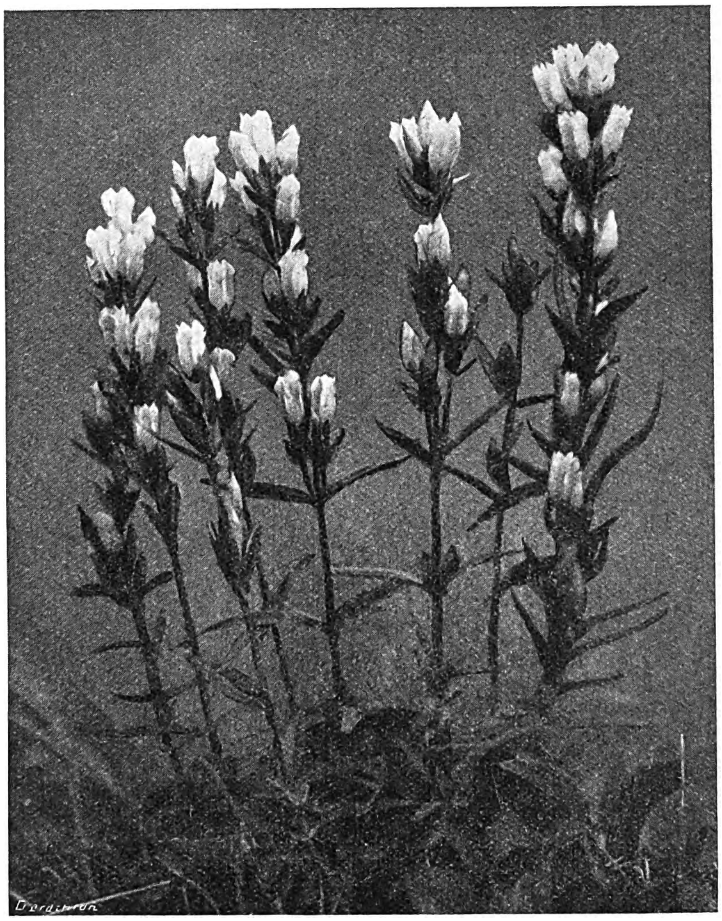


FIG. 170.—GENTIANA SCEPTRUM.

Such a lovely little plant is well worth a good deal of trouble, as it is of exceptional beauty. It grows only a few inches high, with pointed, narrow, glaucous leaves of attractive hue, and wonderfully large flowers, yet quite proportionate to the plant; these latter are of an exquisite shade of violet, brightened by a showy orange palate. The whole appearance of a plant, or, better still, a group of a dozen or more plants, is exquisite.

A few varieties are known, and one of these called L. alpina rosea, comes pretty true from seeds, which are offered by some seedsmen. This variety has rose-coloured flowers with the orange palate which is such a good feature of the type. Specially pretty forms of the rose-coloured variety should be propagated by cuttings. There is also a variety called L. alpina concolor, which has violet flowers, without the orange palate, but this is not so attractive as the others. In addition, there is a white variety with an orange palate, called L. a. alba, but as seeds are not procurable it should be propagated by cuttings.

To grow this Toadflax well it should have a light, gritty, well-drained soil and a sunny place. It does well in crevices of the rockwork and will sometimes live there when killed on the level. I consider the best results are obtained by sowing the seeds very thinly, in May, where the plants are to bloom, and thinning the seedlings to about three or four inches apart. But seeds may also be sown in pots or boxes under glass from March until June and the seedlings planted out in early June. Such plants should bloom the same year.

EUPHORBIA MYRSINITES.

Few flower lovers will admit of possessing much affection for the Euphorbias, and in the rock garden there are only one or two species with any claim for entry to the realms of choice subjects. Yet many people like to have a few plants with characters of their own to differentiate them from their neighbours, and to such Euphorbia Myrsinites may be suggested as having some slight claim. It makes no pretension to showiness, but has rather greeny-yellow flowers on long, trailing branches, clad with glaucous-blue foliage. This plant comes from Corsica, which would point to its love for a dry position in sun, and this indeed, is what it requires. It is a plant which seldom rises to more than a few inches high, but it compensates for this by its long, trailing stems. It is increased by seeds or cuttings, but the shoots may also be layered. It is quite hardy, provided that it is in a dry, well-drained position.

THE PEARL BERRY.

During October a plant of Margyricarpus setosus, the Pearl Berry, was very attractive in my rock garden. It is planted so as to hang over a stone ledge, and, depending from the top, it is remarkably pretty with its deep-green, sharp-pointed foliage, well set with the lovely, wax-like, pure white fruits, so like pearls as to justify the popular name. It seems to like a rather light soil and is increased by cuttings or by sowing the berries in pots under glass. It may be added by way of caution that M. setosus may be lost in a severe winter.

SPHAERALCEA MUNROANA.

About twenty years ago, I was beguiled by a glowing description of Sphaeralcea Munroana, known then as Malvastrum Munroanum, to purchase a plant and place it in a rocky mound in full sun. It gave much pleasure the first year, survived a mild winter, and then departed this life. A second trial was no more fortunate, and it caused me to turn my thoughts towards the many other alpine flowers of more reliable constitution. But others more fortunately placed in the way of climate may have better fortune, and this trailing plant may be commended to them for consideration when planting alpines in spring. With me it never grew to great length, and its trailing shoots were not more than eighteen inches long, whereas Mr. Reginald Farrer, who called it "a useful but rank Malvad," spoke of it having stems a yard or so long. His epithet of "rank" was modified by the after-praise he gave the plant for hanging over a cliff, or other high place. However, one can only write of a plant as one has grown or seen it, and there was nothing rampant about S. Munroana in the all-too-brief periods I had it, and I appreciated its rather grey, Ivy-like leaves and bright scarlet flowers, Mallow-like in their aspect. It must have a dry, sunny place and room, either to trail down a bank or over large stones. C. Munroana is not common in commerce. Increase is effected by means of seeds or division, but the runners may be pegged down and will root.

CORNUS CANADENSIS.

Cornus canadensis, the Canadian Dogwood, is a plant which holds its own admirably in the estimation of lovers of dwarf plants suitable for rockwork or for covering a shady spot with pretty leaves and flowers. The inflorescence is white and the blooms are produced very freely to a height of about six inches. It is a boon to have a plant such as this, which loves a shaded or partly-shaded spot and will cover the ground with its bonny leaves. But the attractions of Cornus canadensis do not end there, for in autumn it dons its most glorious garb of colouring, when the leaves assume a wonderful variety of tints and form in themselves a feature of the highest beauty. My plants have coloured well this year, and have been greatly admired. C. canadensis is increased by division or cuttings. *S. Arnott.*

GENTIANA SCEPTRUM.

This beautiful, autumn-flowering plant is a native of Vancouver Island and the mainland of British Columbia, where it grows in damp, peaty meadows. It belongs to the Pneumonanthe division of the genus, and is known on the Pacific coast as the Swamp Gentian. On the west coast of Vancouver Island the plants commence flowering when very young and only three inches high, but they sometimes attain a height of two feet. The larger plants, in the open, are bushy and their several stems may each have a dozen beautiful, bright-blue flowers, all open at the same time, arranged racemosely or spicately.

Gentiana Sceptrum, although sufficiently attractive for any garden, asks for no attention from the hand of man, and is therefore a valuable plant to those interested in wild gardening. It established itself in the uncultivated part of my garden when, without any thought of what would happen, I planted a small clump of it by the edge of a shallow well which overflows in autumn. The light, chaffy seeds, of which it bears a profusion, evidently floated over into a meadow, and two years after planting the clump all the vicinity was bright with the flowers of the then small seedlings. Some of them have grown into large clumps now, and the accompanying photograph (reproduced in Fig. 170) shows one about fifteen inches high. *G. Fraser, Ucluelet, B.C., Canada.*

HARDY FLOWER BORDER.

MICHAELMAS - DAISIES.

The perennial Asters occupy an important position among hardy herbaceous perennials as they may be used in such a variety of ways and positions, being equally useful for grouping in the mixed border or planting in open spaces in shrubberies. Many of them may also be grown with excellent effect in the semi-wild parts of the gardens, and especially where the dressed portion finishes and merges into the wilder parts. They are, perhaps, seen at their best when planted or massed in borders backed by trees and shrubs. In such positions the old flower stems should not be cut down—as is too often done—for, if left, these present a mass of warm, brown colour throughout the winter, and are often very beautiful when covered with hoar frost.

Apart from their value in the decoration of the garden, Asters are ideal for indoor floral arrangements, especially some of the more slender-growing species and varieties, the variety Climax, with long, graceful sprays, being particularly good for this purpose. There are few good hardy plants less exacting in their requirements, but at the same time, like most plants, they repay good cultivation. They may be replanted at any time from now onwards until the end of March; some of the strong-growing varieties of the Novi-belgii section should be replanted every year. All strong-growing sorts hould be given plenty of room and their growths estricted to from four to six, when they will produce flowering laterals right to the ground.

Climax. Henry Adams, Sam Banham, Aldenham Pink, and Pink Profusion, are all good varieties; the smaller Novae-angliae section includes the well-known Lil Fardell, rubra, W. Bowman and the fine Barr's Pink and Purple King. The Amellus section include some fine varieties, one of the best being King George. With so many new varieties there is a danger that the species may be overlooked, but many of these, when well cultivated, can hold their own with any of the varieties for grace and beauty. Aster Thomsonii and its variety nana are among the most charming of our hardy, blue-flowering plants, remaining in flower for many months. Other species worth a place in any collection are A. turbinellus, A. patens, A. Piccolii, A. cordifolius, A. undulatus and A. diffusus var. horizontalis. *J. C.*

BULB GARDEN.

COLCHICUM RUBENS AND C. LILAC WONDER.

With reference to my note on Colchicum Daendels in *The Gardeners' Chronicle* of October 15 (p. 305), I have now flowered two other new Colchicums. These are Rubens and Lilac Wonder. Rubens followed about a fortnight after Daendels opened its second bloom, and Lilac Wonder was the latest to flower, and was just about over by October 21. Of the three, I consider Rubens the best, although it is not quite so large as Lilac Wonder. It is of a fine red-purple with a white base and tube, and is of better form than the others. Lilac Wonder developed an additional segment on each of the three flowers produced, and in every case one segment was rather deformed, which is a serious defect in an otherwise very fine flower. Lilac Wonder, which has been the largest of the three, opens a rich lilac, passing off to purple-lilac. Comparing these three with the best forms of Colchicum speciosum, then in flower, it may be said that the new hybrids are larger and taller and a distinct advance upon C. speciosum. With the exception of Rubens, which is of more rounded shape, they lack the refinement of C. speciosum, but are much larger in size of flower than C. speciosum, C. giganteum or C. Bornmuelleri. If the other hybrid Colchicums are equal to the three I have tried, these flowers will be very valuable additions to our garden in autumn. *S. Arnott.*

ORCHID NOTES AND GLEANINGS.

PROMENAEA CITRINA.

Promenaea is, by some authorities, retained as a section of Zygopetalum and, possibly, the best known of the few species is P. citrina. The ovoid pseudo-bulbs are about an inch long, compressed, with acute edges; the oval-oblong leaves, shortly petiolate, are two to three-and-a-half inches long; the short peduncles, rather shorter than the leaves, are usually one- or two-flowered. The flowers are about two inches in diameter, bright citron-yellow, the labellum and column spotted with red.

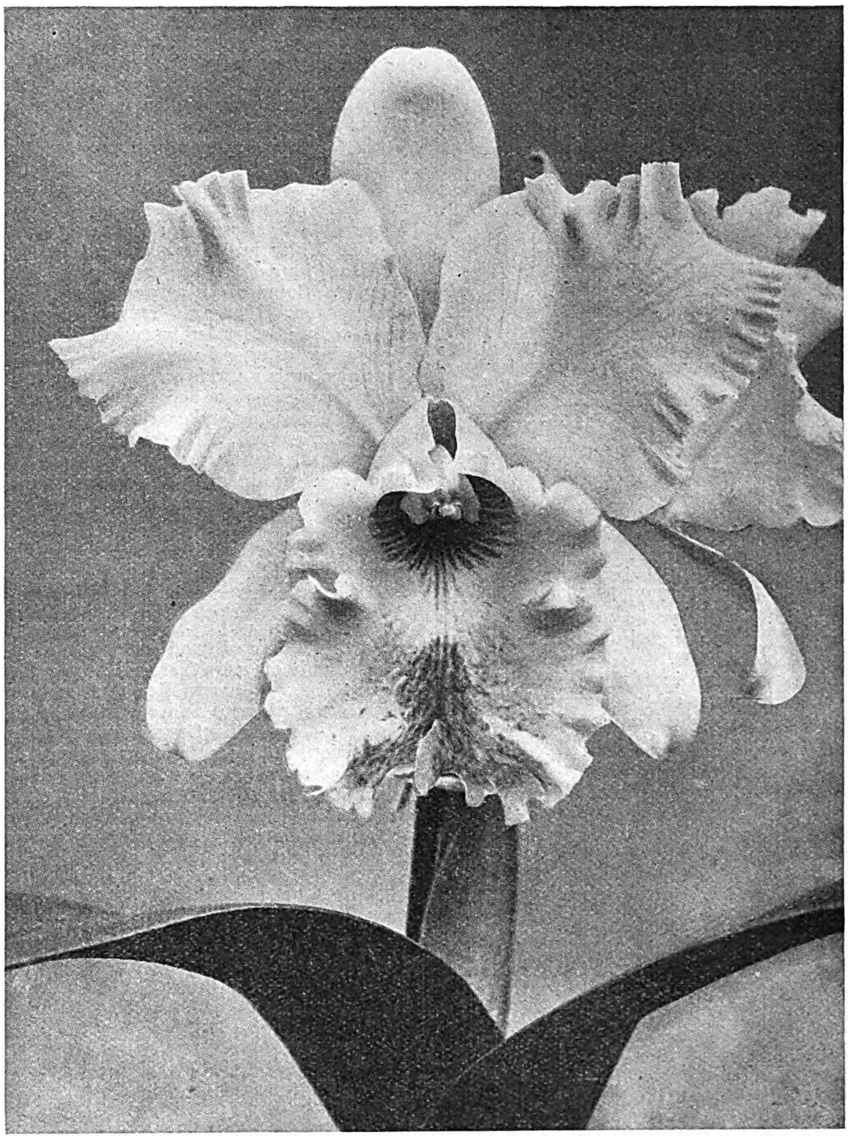


FIG. 171.—LAELIO-CATTLEYA SUNBELLE VAR. SUNSET.
R.H.S. Award of Merit, November 1. Flowers rosy-mauve, yellow and purple.
Shown by Frederick J. Hanbury, Esq., Brockhurst. (see p. 372).

This decidedly pretty little Orchid is of easy culture and succeeds admirably in the Cattleya house when grown in pans or pots containing fibre and Sphagnum-moss, with a few nodules of charcoal. It thrives best when suspended from the roof, but I have seen excellent examples grown on the side staging. The plants enjoy a liberal supply of water at the roots during the growing season.

The history of P. citrina appears to be somewhat obscure, although it is highly probable that the species was first detected by Gardner, on the Organ Mountains of Brazil, in 1837, and from Gardner's specimens, Lindley described and figured the plant as Maxillaria xanthina, but afterwards separated it from that genus, and upon it—with some other allied species—founded the genus Promenaea. If the plant discovered in the earliest years of the nineteenth century by the French traveller, Descourtilz, in Minas Giraes (Brazil) and called Epidendrum Jonquille was, as Lindley believed, identical with Promenaea citrina, then credit for the discovery of this interesting and very pretty little Orchid must be assigned to him and not to Gardner.

P. citrina is free-flowering, and the bright blossoms, usually produced during summer, are persistent for a considerable period; it is a little Orchid that combines beauty and interest with a quaint appearance. *Ralph E. Arnold.*

INDOOR PLANTS.

ASCLEPIAS CURASSAVICA.

This native of South America is of considerable interest and beauty. It may be grown from cuttings annually, to form small plants, in seven-inch pots, or it may be grown on year after year, when it will develop into a small shrub.

The bright scarlet flowers are produced on erect, solitary umbels, which are fully developed during July and August. Each blossom is about half-an-inch in diameter, the petals being bent downwards at the tips, which characteristic imparts a graceful and charming appearance to the inflorescence.

A small batch of plants will provide a very attractive feature in the greenhouse or conservatory, if given the correct cultural treatment. The method I have found to be the most successful is as follows :—Cuttings of the soft tips of the young shoots are taken in April, and inserted in pots of sandy soil, which are then placed in a warm propagating frame. Propagation is purposely delayed until April, so that the plants may be kept dwarf. If larger plants are required cuttings may be struck in January or February.

Five cuttings are inserted in a three-inch pot, and when they are sufficiently rooted, they are transferred bodily into a five-inch pot. The plants may be flowered in this size, or they may be transferred into seven-inch pots. If the former method is adopted, it will be necessary to pay strict attention to feeding, as the plants require a liberal diet to keep them in good health. Watering must also be carefully attended to, as they—like the Poinsettia—quickly lose their lower leaves if the roots are allowed to become dry. The compost which I have found to be best suited to them consists of two parts loam, one part peat, and a small amount of silver sand. Peat is preferable to leaf-mould, as the latter is inclined to cause the plants to make sappy growth. Firm potting is essential, and no pinching is required. *G. F. Gardiner.*

PLUMBAGO ROSEA.

This Leadwort is of considerable decorative value, its rosy-scarlet flowers and graceful habit of growth rendering it meritorious as a winter-flowering plant. It succeeds in a stove temperature or a warm-intermediate house, and grows freely in good friable loam with the addition of some rotted manure and sharp sand. Cuttings, procured in early spring, offer a ready means of increase, and are produced abundantly by plants which have been pruned back after flowering. Serviceable plants may be grown in five-inch or six-inch pots, and it is very effective when planted out in a warm house.

P. rosea was introduced from the East Indies so long ago as 1777, and is figured in *Bot. Mag.*, t. 230, the variety coccinea, which has larger and more brightly-coloured flowers, being figured in t. 5,363.

The flowers are thin in texture, so that it is of paramount importance to elevate the plants as near to the roof-glass as possible, and so render the sprays suitable for cutting. This Plumbago is not suitable for forming a specimen plant, but small-sized examples are very elegant. Planted out, however, P. rosea will clothe a wall in a most attractive manner. *R. A.*

FLORISTS' FLOWERS.

SOME OUTSTANDING CHRYSANTHEMUMS.

During November and December, Chrysanthemum enthusiasts will be revising their lists of varieties with a view to acquiring others which may add interest to next season's floral display. It is as well to bear in mind the fact that a first-class variety takes up the same amount of room, and requires the same attention during its various stages of growth as one of doubtful quality.

Those who desire varieties which will be useful for cutting as well as for growing into specimen plants should not overlook In Memorium, a dwarf, crimson, Japanese sort of small type ; and Gloriosa, a golden-amber variety of sturdy growth, and bearing fairly large flowers. These are two of the finest varieties in commerce, and useful for any purpose. Both should be grown without stopping or pinching, and first-crown buds secured. If they are vigorous, the plants will produce from ten to twelve good blooms each.

Mrs. R. F. Felton is another fine introduction. The rich crimson flowers are carried on long, pliable stems, and are of fair size, but remarkably light and graceful. Alfred Durbin bears flowers of similar build to the last-named, but the colour is terra-cotta. Both varieties grow rather tall. The same good qualities are to be found in Harmony, the colour of which is copper and orange. Blanche Poitevine should be in every collection, as it is so useful as a pot plant. The pure white, incurved flowers are carried on plants which rarely reach a height of eighteen inches. It should be allowed to break naturally, and be grown in pots not more than seven inches in diameter.

Teresa, of bronze-apricot colouring, is indispensable, and should be allowed to carry about eight disbudded blooms. It flowers in December. Two other varieties which should be grown are Nero, crimson, and Liberty, crushed strawberry. Neither is a good grower, but the flowers have tremendous lasting qualities, and the latter is unique in colour and very pleasing.

For early flowering, Salmon Queen and Brightness are splendid. The latter, with its light crimson and gold flowers, borne on plants of perfect habit, is ideal for pot culture and flowers early in October. All the foregoing are useful either as pot plants or for cutting.

Single Chrysanthemums are usually grown for cutting and are popular on account of their lightness and because the flowers last well in water. The larger varieties should be disbudded. Robert Collins, amber ; Susan, rose-bronze ; Bronze Molly and Mrs. W. J. Godfrey, peach-pink, are four of the best among the tall-growing Singles. Some of these are nearly ten feet tall this season. Margaret Davis, ruby ; Portia, terra-cotta ; Sweet Auburn and Hilda Shoebridge, light pink, are good varieties of medium height. Fantasy, amber and fawn, a seedling from Bronze Molly, promises to become a favourite. It is very free-growing and carries a big crop of flowers of the largest size. Lady Mary Davey, scarlet-terra-cotta, and Mrs. A. Robertson, pink, are also free producers of flowers for cutting. Both are of medium size and possess a good habit of growth. Lady Mary Davey is suitable for sprays or partial disbudding.

Among large Japanese varieties, Mr. T. Slack deserves attention. Red Majestic is of similar colouring and, like its parent, is in great demand for exhibition use. Julia, bronze-pink, builds up a fine bloom of good quality, and has a nice, dwarf habit of growth, similar to that of its parent, the well-known Mrs. B. Carpenter. Cissie Brunton is a grand white variety of the largest size. Yellow Edith Cavell should be grown for exhibition, but is even more useful as a decorative plant, as it will carry a large crop of disbudded blooms. Mr. T. W. Pockett is a pink variety which has been in practically every exhibit of note since its introduction a few years ago. It is a grand grower and an altogether reliable variety. Yellow Majestic, a novelty of last spring, will be largely grown, especially if it proves as robust as its distinguished parent. *Charles Hodgson, Acton Place Gardens, Acton, Sudbury, Suffolk.*

PUBLIC PARKS AND GARDENS.

Swindon Town Council has approved plans and estimates for laying-out land adjoining the eastern boundary of the county ground as a pleasure ground, at £5,634.

The Swansea Corporation is recommended by the Parks Committee to authorise the Borough Estate Agent to negotiate for the purchase of land at Tregernydd Farm for a recreation ground.

Leicester Corporation is recommended to set apart 168 acres, forming portion of the Braunstone housing estate, for the provision of a new park.

The Ministry of Health recently held an enquiry into an application made by Yiewsley Urban District Council, for sanction to borrow £3,000 for laying out a recreation ground in Falling Lane, to include the provision of tennis courts, a bowling green, etc.

ROSE SPECIES FOR THE GARDEN.

With so many new Roses to choose from, there is a real danger that some of the beautiful Rose species may be neglected for garden decoration, for which purpose many of them are so well suited, either as lawn specimens for shrubbery borders or for planting in groups in the wilder parts of the garden. Apart from their flowers, many of them are also worth growing for their graceful habit or fine foliage, while others have the added attraction of large and brilliantly-coloured fruits.

Rosa sericea has single white flowers, with four petals arranged like a Maltese cross ; it is one of the earliest species to commence flowering and makes a large specimen some fifteen to twenty feet high, and has very fine foliage. R. omeiensis var. ptercantha was originally described as a variety of R. sericea, but has now been separated from that species. This Rose is remarkable for its large, translucent and highly-coloured spines that are produced on the young wood ; on the old wood they turn brown, therefore a few old shoots should be cut out every year to encourage strong, new growths to spring up from the base.

R. Hugonis is probably the most graceful and beautiful of all the species for use as a lawn specimen. It grows freely to a height of six or seven feet, and its graceful, arching shoots are well covered with fine foliage. In most seasons the single yellow flowers are produced in great profusion, but as it is one of the earliest of species to flower, the display is sometimes spoiled by spring frosts. This Rose should make a beautiful informal hedge or screen. No pruning is required beyond the removal of dead wood, or a few of the old branches, to prevent overcrowding. Rosa Moyesii, a comparatively recent introduction from China, has very beautiful flowers which are followed by brilliant fruits. This species seems to like a heavy soil, and where it grows well it makes a beautiful hedge or screen. R. setipoda and R. Fargesii are two of the newer Chinese species, and have brilliant, long, urn-shaped fruits. R. Willmottiae, R. Webbiana and R. sertata are all worth growing for their fine foliage and graceful habit.

R. multiflora and its variety polyantha are both large, free-growing plants, well-suited to the semi-wild garden or for lawn specimens. R. spinosissima, the Scotch or Burnet Rose, is a native of Great Britain, and common on sandy links on the coast. It may only attain a height of about six inches, but will be covered with beautiful, single, white flowers, which appear out of all proportion to the size of the plant. At one period there were over one hundred varieties of this Rose in cultivation. The variety altaica is very beautiful ; in fact, all the best sorts are worthy of more general cultivation. These Roses grow in the poorest of soil but, naturally, they respond to good cultivation.

R. rubiginosa, the Sweet Briar, is also a native of these islands, yet is rarely well-grown in the garden ; it makes an excellent hedge or screen as it stands trimming well. R. Wichuraiana, of which there are now so many hybrids, is well worth growing for its glossy, polished foliage, and is an excellent plant for covering dry slopes and banks. R. rugosa and its many fine hybrids are well-known, and yet they are not so generally used in the garden as they deserve to be. They make fine lawn specimens, screens or hedges, and are well suited to the semi-wild parts of the garden.

R. rubrifolia should be freely planted, as its beautiful foliage is ideal for many floral arrangements. R. microphylla var. fl. pl., R. pisocarpa, R. macrantha, R. moschata, and many other old favourites are still worth a place in the garden. R. Banksiae, R. bracteata — the Macartney Rose, and one of the parents of Mermaid—and R. laevigata, are all excellent for warm walls, and should be more generally grown in such positions. My remarks, which apply to only a few kinds will, I hope, direct attention to at least a few of these Rose species, and may be opportune now that the planting season is with us. *J. Coutts, Kew.*

TREES AND SHRUBS.

LOMATIA FERRUGINEA.

I WAS interested in reading Mr. Harrison's note (p. 345) on this choice species, and to see the illustration (Fig. 155) of the fine specimen at Castle Levan, as Lomatia ferruginea appears to be a plant whose ornamental value and comparative hardiness are generally underrated.

As a foliage plant, L. ferruginea is highly ornamental from its earliest days, but as a flowering subject it will scarcely be seen at its best until twenty years of age. The accompanying photograph (Fig. 172), taken in 1919, shows a specimen planted in its present position here rather more than twenty years ago. This is now fifteen feet tall by twelve feet through, well-furnished to the ground, and standing as a solitary specimen in an open situation where it suffers no injury from wind or frost. Flowers are borne in great profusion each year, and fertile seeds are obtainable in quantity, by which means and also by cuttings, the plant has been freely propagated.

As regards the inflorescence, personally, I should describe the petals as prominently marked with cherry-red or deep rose-pink (not scarlet) on a bright buff ground carried all round the central marking.

A freely-flowered branch from our specimen was shown before the R.H.S. on July 19 last and received an Award of Merit. As regards the Castlewellan plants, with which I have been familiar for many years and which were, I believe, the first to flower in the British Isles, these are now about forty-four years of age and, I can assure Mr. Harrison, are specimens of the typical form, without variation of any kind. Mr. Bean's reference to their habit of flowering may, perhaps, be accounted for by the fact that at the time of his observation their full floral quality was not realised at Castlewellan, and that they were then treated more as foliage plants and pruned somewhat heavily each year, which resulted in the formation of handsome, shapely evergreens, and the suppression of exterior flowering wood. In later years these fine specimens have been allowed to develop naturally, and the defect remarked by Mr. Bean no longer obtains.

In the garden of the late Sir John Ross of Bladensburg, at Rostrevor, in this county, self-sown seedlings are freely found around the base of a matured specimen, where the seeds fall and lie undisturbed in rocky crevices. A similar instance of self-propagation can be recorded from the same garden, in the case of Eucryphia pinnatifolia. *H. Armytage Moore, Rowallane, Saintfield, Co. Down.*

HYPERICUM PATULUM FORRESTII.

DURING the past few years Hypericums of the "patulum" group have become popular. Perhaps it was the half-hardy tendency of the type which caused distrust among gardeners, but the variety Henryi soon proved itself to be not only a great acquisition as regards size of bloom and robust habit, but also because it is as hardy as one could reasonably wish. As Hypericum patulum Henryi germinated so freely it soon became distributed widely, but it has now to share popularity with the variety Forrestii, named after the collector who discovered it in Hunnan. Young plants and home-saved seeds were distributed from Wisley, at first under number, but it may reasonably be assumed that this fine form is now being sent out under its varietal name.

The flowers of H. p. Forrestii are larger than those of its predecessor, and borne with equal freedom, while the growth may be described as strong. Raised from the abundant seeds, which germinate readily, it reproduces fairly faithfully the varietal characteristics. Slight variations in the size of the flowers will certainly be observed, but they are rarely smaller than those of the variety Henryi, and are usually much larger and of a fine, golden, buttercup-yellow. Though usually described as summer-flowering the succession is long and will extend from the end of June or early July to September.

The pruning of H. patulum and its varieties may consist of cutting back those branches which have flowered to two to five buds from the base, but excellent results may be obtained by cutting the whole plant back to twelve or eighteen inches above the ground and removing entirely all weakly growths. In the latter case pruning should be deferred until early spring as the buds are apt to break too soon after early pruning, and be nipped by the severe frosts which so frequently herald the first two or three months of the year. Hypericum patulum Forrestii received an Award of Merit in 1922 and the Award of Garden Merit in 1924. *L. B. C.*

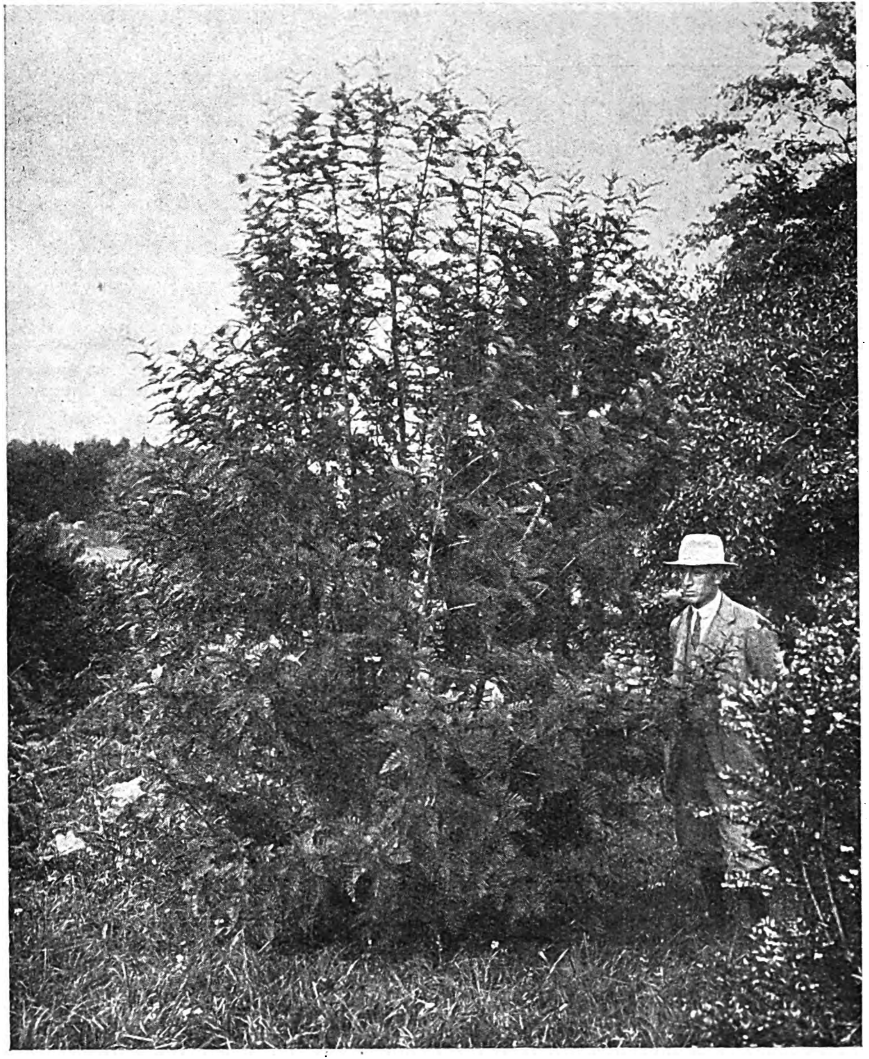


FIG. 172.—LOMATIA FERRUGINEA AT ROWALLANE.

LIQUIDAMBAR STYRACIFLUA.

OF the numerous deciduous trees which are desirable on account of the autumn colouring of their foliage, this Sweet Gum, from the Eastern United States, ranks amongst the most attractive. It is the most popular species of a small but scattered genus, and was introduced to this country during the seventeenth century. It forms a stately tree, similar in general appearance to a Maple, and in its native country will grow to 150 feet in height, but in Great Britain it will seldom exceed sixty feet or seventy feet.

The trunk is usually straight and erect, the rather slender branches forming a pyramidal head. They are clothed with attractive, long-petioled, five- or seven-lobed leaves, the bases of which are heart-shaped, while the divisions are acutely pointed and have finely-serrated margins. Thin in texture, these leaves are of a rich, lustrous green colour during the summer months, changing in early autumn to varying vivid shades of orange, scarlet and purple.

Strangely enough, trees are sometimes found which do not fulfil the general expectations of brilliant autumnal colouring. There is one such tree growing in the woodland at Wisley, growing within a short distance of another good specimen which colours every autumn under apparently similar conditions. In America, the Liquidambar inhabits moist and sometimes swampy places, but over here it seems to prefer deep, loamy or peaty soil with a not too abundant supply of water. It is hardy when established, but the growths of young plants are liable to injury by frost. It is best raised from imported seeds, as seeds seldom ripen in this country; if seeds are not available, layering may be resorted to. *A. G. F.*

CRATAEGUS COCCINEA.

THIS is a conspicuous and cheerful-looking shrubby tree for the woods, flower garden or park during the early days of autumn. It is also very noticeable in late spring when in bloom, as the flowers are nearly an inch across, and produced in packed corymbs, while the leafage is obtuse, serrated, and of a bright green hue. But in autumn the green colour changes to brilliant tints. This season, unfortunately, the winds soon stripped the trees, but the loss gave greater prominence to the beautiful scarlet berries—the brightness of which has merited for this tree the well-known and apt description of Scarlet Thorn. The berries hang in clusters of as many as twelve in a bunch all over the twigs, giving the tree a very bright appearance, especially in sunshine. Trees of this Thorn usually reach a height of fifteen or twenty feet. Old age is, alas! affecting one of the specimens in our park. *C. T., Ampthill.*

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CHILI AND THE ANDES.

No. 1.—On the Way.

About a year ago, I decided, quite suddenly, that I would make an expedition to Chili to collect plants—quite soon. I am a great believer in doing things, especially travel, on the spur of the moment, but in this case I found that the "quite soon" part of my programme would be a mistake. It was important to arrive in Chili in early September—the Chilian spring—and even by allowing myself a week or two in which to prepare, and get away, I could not but arrive six or eight weeks late. All I could do, therefore, was to resign myself to the best part of a year's delay, haunted by a morbid dread that something would turn up—a *carte blanche* commission, say, to make the world's finest rock garden, or what not, so as to prevent my getting away in August, 1927. I must confess that he would have been a man of wide vision and a deep purse who could have propounded such a garden as would have tempted me to alter my plans, and, anyway, he did not materialise.

We set sail for Valparaiso, my companion and I, on August 4, on the R.M.S. Orbita. Opportunities for horticultural and botanical study on board ship are limited. The flora of the S.S. Orbita, when we came on board, consisted of half-a-dozen clipped, pyramid Bays and four hanging baskets of Ferns in the "terrace balcony," Gladioli and Scabiosa caucasica on the saloon tables, and lordly festoons of Smilax draping the front of the cold buffet. A few days out the Gladioli and the Scabious were replaced by artificial flowers, very gay and effective, species unknown. The Smilax remained, although at the end of a fortnight its leaves began to wilt. Then I made the surprising discovery that the Smilax was artificial. It strikes me as an outstanding piece of realism to have artificial Smilax which wilts; a realism equal, almost, to that of the man who kept a series of wigs of assorted lengths, so that by wearing them successively, he gave the illusion of gradual growth—and then a hair cut!

Our first port of call was La Rochelle, where we went ashore for five or six hours. We explored the sea-coast for a mile or so and found plants of some interest and no importance. The best thing was a handsome Thistle-like plant with large blossoms of a lovely tawny-gold. On the six-mile walk from the port to the town of La Rochelle, we passed many gardens, and were very little impressed by them. Bignonias were glorious on some of the walls, giving masses of orange and cinnabar trumpets, such as the English climate seldom permits; Mimosas and Eucalyptus flourished, and there were large specimens of Paulownia which, judging by their enormous fruiting trusses, must have been a superb sight when in flower. But the general impression was that, from the gardener's point of view, it was a place of lost opportunities. The town itself, on the other hand, is extremely interesting and picturesque, with its arcaded streets, and a harbour full of richly-coloured fishing boats and fisher folk.

The Spanish ports of Santander, Corunna and Vigo, were blank disappointments. Our shipping company makes quite a song about the delights of these places in their booklets, and we all expected, therefore, that we should be able to go ashore for a few hours at least. At each of these attractive-looking places we were left guessing and hoping until the last minute, and then there circulated dark rumours of difficult tides and such like—which no one believed—and we "pushed on," a much disgruntled crowd. One American in particular was greatly upset. Having spent a week or two in "doing" practically the whole of Europe, he had chosen this route home to Georgia, instead of going via New York, solely in order that he might "do" Spain by setting foot in one of her ports. My own particular grief was that I had hoped to scurry round the rocky environs of Vigo in the hope of finding Cheiranthus linifolius growing wild. The late Cedric Bucknall sent me seeds of this charming lilac Wallflower many years ago, from Vigo, and from that small sending the plant spread and has now taken firm hold in British gardens and British seed catalogues.

After the Spanish disappointments we settled down to the serious business of sports, fancy dress balls, carnival dinners and *not* studying the Spanish language. Spanish is essential in South America. Everyone who goes there tells himself that he will "mug it up" during the voyage, but no one has ever yet been known to do so.

We had a week's run of warm weather and unbroken calm, when life on board was like a strange mixture of Brighton pier, the Piccadilly restaurant, and a very well done children's party. Then, on one heavenly dawn, we came into Bermuda. Here we had six hours ashore, and they were six hours of sheer delight. We landed by motor launch, a four-mile run among very small islands, the sea intensely green and purple and peacock blue. Running close in shore we could clearly distinguish a dwarf Solidago growing near the sea, and could hear the shrill song of cicadas. The low-lying mainland was wooded with the Bermuda Cedar (Juniperus bermudiana). On landing at Hamilton, the chief town of the islands, we drove straight out to the Government Agricultural Station, where, in the absence of the Director, we met Mr. L. Oglevie, who was most kind in showing us round. At his suggestion, and in his company, we drove on a mile or two, to see one of the few remaining tracts of original Bermudan swamp, untouched, undrained, and in its original wild state. This swamp is perhaps fifteen or twenty acres in extent, and it is good to learn that its owner recognises its scientific interest, and intends to preserve it untouched and undrained. It lay in a little hollow, and we were able to push our way well into its jungle. The most striking features were the native Bermudan Palmetto (Sabal Blackburniana), a handsome Palm, twenty feet to thirty feet high, whose large fans rattled strangely when stirred by the wind, and Juniperus bermudiana. The Royal Fern (Osmunda regalis) and Osmunda cinnamomea were plentiful and luxuriant, with fronds nine and ten feet tall, and another striking plant was Mariscus jamaicensis, like a nine-foot Rush. As we left this interesting reserve, a cardinal bird flashed across the open. About the sedgy margin were many splendid butterflies—especially a large, brilliant orange fritillery.

The chief industries of Bermuda appear to be the cultivation of vegetables, Lilies and tourists. Owing to the favourable climate, vegetables can be produced all the year round. Celery, Carrots, Onions, Kale, Beets, Tomatos, Lettuce and Parsley are exported, largely to New York, where good prices are obtained. A high standard of quality is maintained by a rigid government inspection. We saw many plantations of Bananas—the delicious Lady's Finger variety—and the Papaw was plentiful, though not ripe. Tourists seemed to be widely distributed, but were most plentiful on the golf courses—of which there are seven.

The cultivation of the Bermuda Easter Lily (Lilium longiflorum) has passed through evil days owing to disease, but thanks to work done by the Agricultural Station, the industry is recovering. The crops are inspected at regular intervals. Some bulbs which Mr. Oglevie showed me were the most superb specimens I have ever seen. We saw a Lily field, but the plants were dormant, and not a leaf, alas! was showing. Juniperus bermudiana is a most attractive tree, and appeared to be plentiful everywhere. It reaches a height of twenty feet to thirty feet, with trunks up to some two feet in diameter, and is well furnished with fine, lustrous-green foliage. The timber is valuable in building, being the only wood, I was told, which will keep sound for any length of time when built in direct contact with the local coral limestone. The wood is valuable for cabinet work. Woollen goods are safe from moths when kept in a chest of Bermudan Cedar, but manuscripts and even some printed matter may be seriously affected when kept for any length of time in a box of this wood, becoming partially or even totally bleached by its action.

The most striking flowers we saw were Hisbiscus and Oleander. The single Hisbiscus were superb, ten-foot and twelve-foot bushes, clumps and hedges, hung from top to bottom with countless satin trumpets, six inches across, crimson scarlet, soft cherry-red, or a rich and curious apricot, and with a glowing, silken sheen. The double scarlet variety was less plentiful and quite without charm. A Convolvulus (Ipomoea villosa) entirely covering and strangling a thirty-foot forest tree in a blaze of sapphire trumpets was good to see, but the best picture of all was a little piece of spontaneous wild gardening in an emerald setting of rough paddock, a few yards from the road. Here was a splash of vivid purple with sparks of orange behind. This piece of brilliant colour was intensified by its lush green setting, by being half-shaded by a giant specimen Cedar, and by a background of white cottages. We scrambled over a low wall to see what plants were making this lovely picture, and found that the purple was Verbena venosa—purple at a distance, magenta at close quarters—and the orange was a self-sown Lantana. Hanging from the branches of the Cedar were olive-grey-green festoons of a curious, lichen-like Tillandsia. The orange Lantana was a roadside weed everywhere. The "Bermudiana," as it is called locally (Sisyrinchium bermudiana), was not in flower, but Mr. Oglevie gave me a pinch of seed which he had collected, and during our drive, by great good luck, I caught sight of seeding plants from the carriage, and stopped to snatch the seeds. Sisyrinchium bermudiana is, of course, in cultivation in English gardens. I have grown it at Stevenage for some years, but there seems to be some confusion and doubt about the species, so I have sent seeds home for trial. It will be interesting to see if the true plant from Bermuda is the same as the pretty, clarety-purple-flowered species of gardens. *Clarence Elliott.*

A DAY IN AMERICA.

Nothing gives one so sudden a mental jolt as the incongruous. One is made aware of likenesses and differences by means of mental comparison and contrast, and pushed to extremes, incongruity results; as when there is a mixture of the familiar and the unfamiliar.

Of course, it was not really incongruous—were we not separated from England by 3,000 miles of ocean? Yet to see such unfamiliar trees in so familiar a landscape, so to speak, as that of Long Island, was odd. A closer acquaintance suggested that the trees were not perhaps so familiar after all.

New York, in October, was hot, much hotter than London at the same season. The absence of trees was very noticeable—a meagre avenue of not very flourishing Planes, here and there; Park Avenue, "up town," as they say, made efforts to appear green, masses of Polygonum Baldschuanicum being grown in a sort of narrow central garden; but I heard that the insatiable demands of traffic would shortly devour even this. Central Park was better. It is a fine place, but ill-kept, and not well stocked with trees. The grass, however, is green, and there are a few—a very few—flowers.

The absence of flowers, and flower shops, in New York city strikes a Londoner at once. Such shops as there are were poorly stocked, chiefly with evergreens, and a few Chrysanthemums and Roses, which are very expensive. I saw no flower sellers in the streets—another surprise for the Londoner—and flowers were not much in evidence in the houses. At first, one is apt to be astonished at what seems indifference to the beauty of flowers. But, as a matter of fact, Americans appreciate them greatly, and delight their friends on arrival or departure with bunches of flowers. But the harsh climate of New York is very different from that of London, and flowers there are an expensive luxury. Not everyone, even in so rich a city, can afford to have them yet, and as for street vendors, or even shops, I can only suppose that the extremes of climate, the heat waves of summer and the Arctic blasts of winter, make the preservation of flowers a difficult proposition.

No sooner did I land in New York than I was whisked off forty miles by car to Oyster Bay, on Long Island, the country residence of prosperous New Yorkers. Theodore Roosevelt is buried there. The country is well-wooded and picturesque, but it was a wet week-end, and I hardly saw it at its best. The woods are full of big-leafed Oak (Q. alba), Tree-of-Heaven, Sumach, Hickory, American Elm and Maples. White Poplar and Conifers have been extensively planted, and on the private estates, Barberry, Spiraea, and other good-colouring shrubs. Owing to a summer almost as wet as our own, the autumn tints have largely failed this year, but there were some fine crops of Apples in the orchards. The Silver Birch is quite a common tree in Connecticut, and, of course, I saw many kinds of Pyrus, which were colouring better than most trees.

In the woods I noticed Indian Pipe (Monotropa uniflora), also called Corpse Plant or Ice Plant; one may see it, perhaps another species, in the rain forest of the Burma frontier, too. Phytolacca decandra, the Pigeon Berry or Pokeweed, was another plant I saw in the wet hedgerows. I was warned to beware of handling a certain climbing plant, abundant in the undergrowth, said to be capable of raising a severe rash; but whether I came on it or not, no ill results followed.

Before leaving America I achieved a great ambition, by going to Harvard and meeting "Chinese Wilson." Probably I was luckier than most hero-worshipers, for when I met the man who has been an inspiration to plant collectors for a quarter-of-a-century I found him all and more than all I had pictured him. He gave me a most warm welcome, and I spent an enchanted afternoon at the Arnold Arboretum, after it had rained "stair rods" all the morning in a way which even hardened Bostonians found embarrassing.

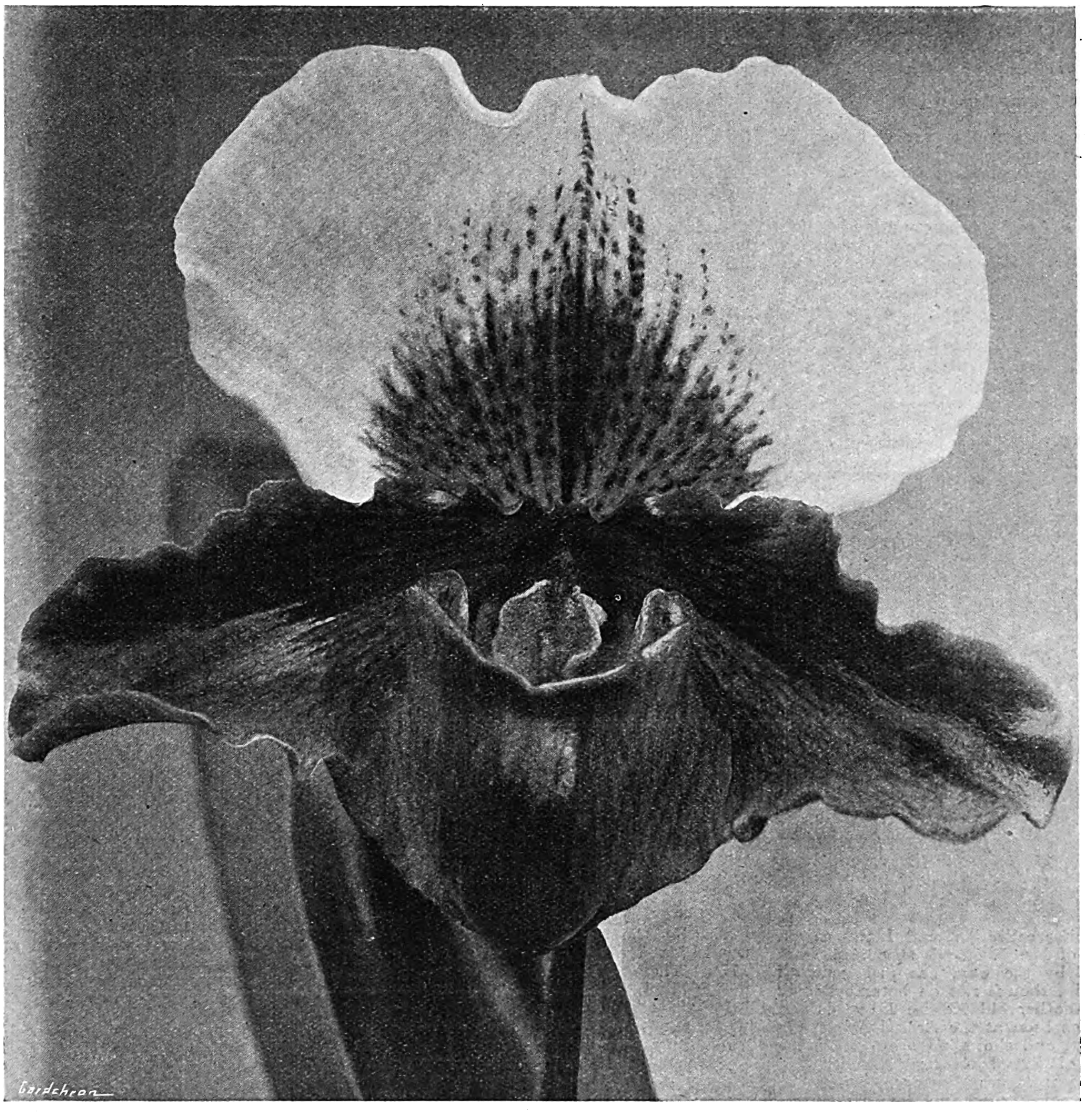

FIG. 173.—CYPRIPEDIUM CHARDMOORE VAR. ALFRED BRIDGES.

R.H.S. First-Class Certificate, November 1. Flowers green, white, and purple-brown. Shown by Miss A. B. Moore, Chardwar, Bourton-on-the-Water. (see p. 372).

Mr. Wilson showed me many of his Chinese shrubs growing well in this severe climate; Berberis Wilsonae, the evergreen, low-growing Lonicera Henryi, with clusters of blue berries; Cotoneaster horizontalis perpusilla, the tree-like Lonicera Maackii podocarpa (W.194), and Acer griseum. Those who have attempted in vain to raise this last from seeds in England may well turn green with envy to learn that it seeds itself all over the place here.

There is no method of deciding where a plant will or will not grow, except trying. Plants do the most surprising things; who would have thought that Enkianthus, for instance, which is only fairly hardy in Britain, would flourish in Boston ? But it does—almost every species. E. campanulatus looked particularly happy and healthy. The most magnificent sight in the Arboretum is, of course, the grove of Tsuga canadensis. The trees are eighty feet high, at a guess, and ten feet in girth, growing thickly on a steep face ; and from a distance they form a great, sombre bank, overlooking the valley.

The hilly nature of the Arboretum is a great feature and adds much to the picturesqueness of the place. Somehow I had expected it to be as flat as Kew, but it is very far from being so ; indeed, it is a goodish climb up to the highest point. Mr. Wilson drew my attention to the value of procuring selected geographical forms for a given climate. The ordinary Cedar of Lebanon, and the Deodar are not hardy at the Arboretum. Nevertheless, there is a small grove of Cedrus Libani here—the plants were brought from the Taurus mountains, and have proved perfectly hardy. Of course it might easily have been the other way on, so whimsical is plant hardiness and adaptiveness, but here practice was for once consistent with theory.

A day at the Arnold Arboretum, and in the magnificent herbarium only serves to whet the appetite. I saw something of the almost complete Conifer collection, and I also saw a consignment of Mr. J. Rock's specimens from Kansu ; he, by the way, has just gone off to China again, though not on botanical work this time. Another old Kewite I met is Mr. Judd, who has been at the Arnold Arboretum a dozen years, and shows no signs of having had enough of it. I venture to think that no English botanist, traveller or collector who visits the Arnold Arboretum but will want to return again and again at every season of the year, particularly so long as Mr. E. H. Wilson is Keeper. *F. K. Ward.*

THE CHRYSANTHEMUM MIDGE.

Growers of Chrysanthemums are notified that the Chrysanthemum Midge (Diarthronomyia hypogaea, F. Löw) has, for the first time, been recorded as doing considerable damage to Chrysanthemums grown under glass in Hertfordshire and Essex.

The midge is a real danger to the industry, and as the small fly, which is responsible for the trouble, cannot travel over long distances, growers who are so unfortunate as to have the pest already upon their nurseries can do much to prevent its increase by restraint in distributing plants and cuttings which are either infested or have been grown in houses where the midge is prevalent.

The appearance of this insect is of considerable interest ; the midge has been known in this country for some years as an inhabitant of the wild Ox-eye Daisy. In 1915 it became established probably after exportation from Europe, in the United States, upon the cultivated Chrysanthemum, and has been a pest of importance there ever since. Yet in Great Britain the first record we have of the Chrysanthemum being attacked is in April, 1927.

Though the variety Monument, imported some three years ago from the United States, is certainly susceptible to attack, and, with one exception, the midge is present on all nurseries so far examined where this variety is grown, there is no absolute evidence that the present outbreak is due to infested cuttings brought to this country from America.

The cause of the trouble is a small, slender fly about one-fifteenth-of-an-inch in length, the female (Fig. 175) of which has a deep orange, and the male (Fig. 174) an almost black body. The flies may be seen resting upon the topmost foliage or stems of glasshouse plants, but the pest is more evident from the galls made by the grubs upon both surfaces of the leaf and also upon the stems (Figs. 176, 177). These galls are about one-eighth-of-an-inch in length, stand out at an angle from the leaf surface, and do not resemble in any respect the working of the common Chrysanthemum leaf-miner.

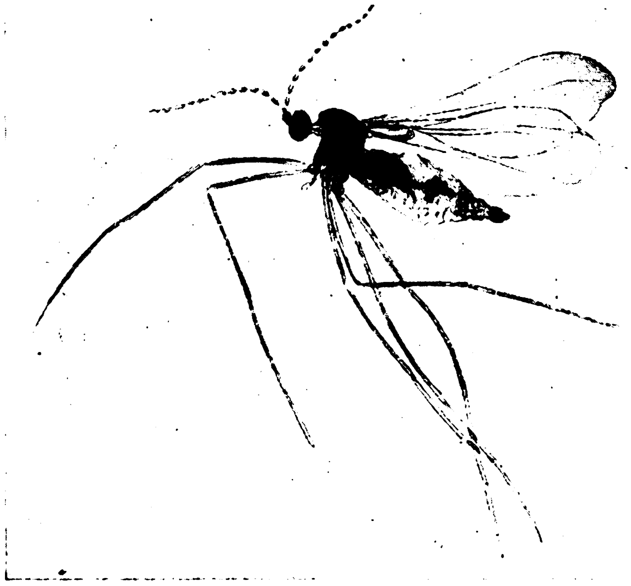

FIG. 174.—CHRYSANTHEMUM MIDGE.
Male, × 16.

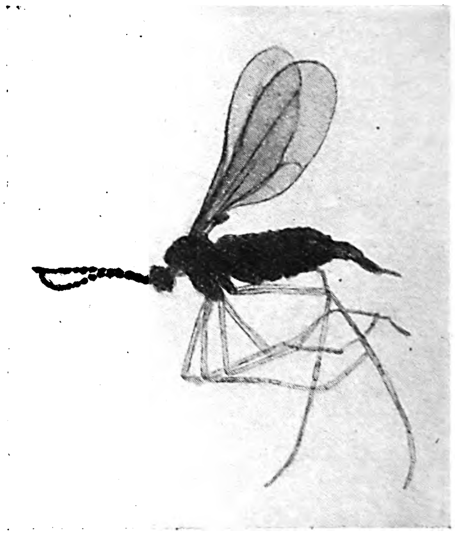

FIG. 175.—CHRYSANTHEMUM MIDGE.
Female, × 16.

For an exceedingly good account of the biology and control of the Chrysanthemum midge, we are indebted to Mr. C. C. Hamilton (*Bulletin* No. 269, University of Maryland Agricultural Experiment Station, U.S.A., August 1924). The bulk of the information given below is extracted from this paper.

The fly lays numerous oblong eggs at night and in the early morning upon the young leaves and stems only in the vicinity of a growing point. Within twenty-four hours after hatching, the minute larvae bore into the leaf or stem surface and later cause a swelling of the plant tissues round them and the formation of a gall. When full-fed the larva changes to a pupa within the gall, through the free end of which it eventually breaks. The adult fly escapes from the pupa, leaving the white pupal skin projecting from the exit hole.

The average length of the stages in glasshouses is as follows :—Egg. five days ; larva, four weeks ; pupa, two weeks ; adult, one-and-a-half day. The total life cycle lasts roughly seven weeks. There is a period of inactivity both during the winter and summer months, but increase takes place from February to June, and again during September and October.

Control Measures.

As no known insecticide will reach the larvae or pupae within the gall, killing the eggs and adults must be resorted to. The latter are readily destroyed by sprays containing nicotine, but control can only be effected if the upper foliage of plants is sprayed twice a week during the periods of activity. The following mixtures have been recommended :—forty per cent. nicotine-sulphate, one part to five hundred parts water ; ninety per cent. commercial nicotine, one part to four hundred parts water. In either case a good horticultural potash-soft-soap should be dissolved in the spraying water at the rate of half-an-ounce to every gallon. As the nicotine persists upon the foliage for some time, many adults are killed as they emerge from their pupal cases. In the United States, measures based on these lines have undoubtedly kept the pest in subjection where carefully applied. When plants are cut back, all the parts removed should be burned, together with any plant refuse. Cuttings should always be taken from recently sprayed plants, and they should be rooted in a house entirely separate from stock plants. Cuttings, after rooting, should be examined for galls once a week, and if any galls appear, the leaves upon which they occur should be removed and burned.

Present Position of the Pest in Great Britain.

The Chrysanthemum Midge probably occurred for the first time last April. Remaining dormant during late spring and summer, there has been a serious increase during September, so that plants on some nurseries have begun to show distortion from the great number of galls on leaves and stem.

The varieties chiefly attacked are Monument, Cheshunt White (Enfield White), Mrs. Barrell, and Everlasting. A few other varieties growing in heavily infested houses have shown only a very slight attack.

Plants grown outside during the whole summer and autumn on infected nurseries have shown no sign of galls, except in one case of Monument, where a few galls were present on young plants.

Growers of Chrysanthemums will materially assist in keeping down this serious menace to their industry if they will at once report the occurrence of the pest upon their nurseries to the Experimental Station, Cheshunt, Herts. Infested material should not, however, be sent with the notification. *Edward R. Speyer, Entomologist, Experimental and Research Station, Cheshunt, Herts.*

THE GENTLE ART OF GARDENING.

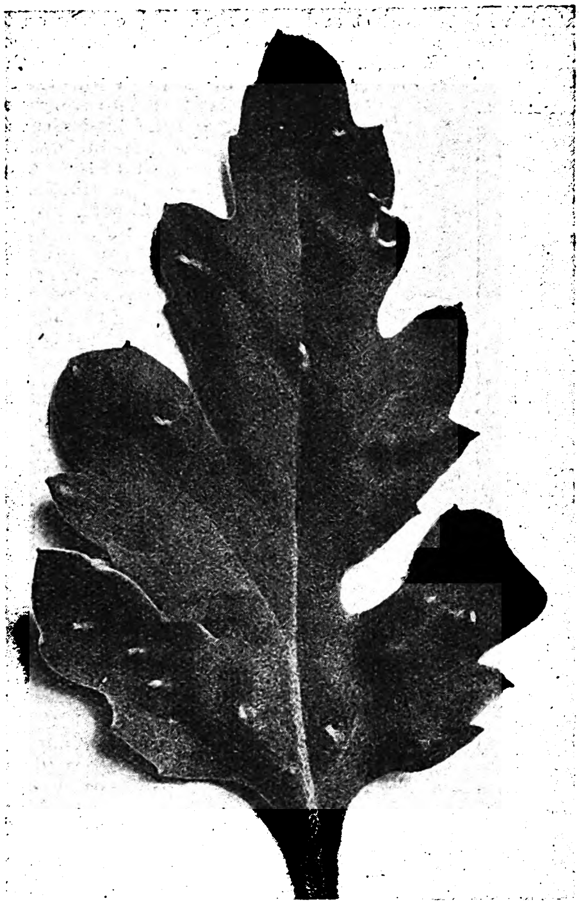

FIG. 176.—GALLS, WITH MIDGES EMERGING, ON LEAF OF CHRYSANTHEMUM CHESHUNT WHITE. (Natural size, see p. 388).

GARDENING may, perhaps, be defined as the preparing of the place, and the assembling and growing of plants, and all that pertains thereto. One of its greatest charms is that no garden need be like any other—either in the selection of plants grown, or in their arrangement; there is unlimited scope for individual taste and experiment.

The pursuit is a pleasant one and reacts happily on the body and mind. The attention which the successful cultivation of plants demands, the rythm of tillage, and the gentle feeling of exhaustion which culminates at tea-time, these, in combination, tend to produce a serene mind, proof against the ordinary vexations of life. Others seek to drown their troubles in alcohol, or gambling, but the happy gardener gets relief without detriment to his health or pocket.

Nevertheless, the gardener exposes himself to trouble from many sources. He is at the mercy of rain, wind, slugs, mice, birds, early frosts, weeds, late frosts, jobbing gardeners and growers, who profess to supply him with plants true to name! There is no limit to his sufferings, and yet I have never heard of anyone who abandoned gardening on any of these pretexts. At the same time, these plagues provide him with an unlimited number of excuses wherewith to explain his frequent failures.

The garden which you want is always very different from the garden which you get. One has to learn toleration. It is better to make a garden of which you do not wholly approve, than to antagonise your family. Thus it comes about that a garden is also a sports ground where levelling conflicts with contours; a Cabbage patch; a menagerie shared by some or all of the following—rabbits, tortoises, dogs, cats, children, peacocks and guinea pigs. It is often also a drying ground.

Among the assets of gardening, apart from the indulgence of your fancy, may be reckoned the many friends you make. The common joys and sorrows of the gentle art make a sure foundation for friendship. It may be added that gardeners make good husbands, whilst in spite of all they suffer they are not irritable, like artists journalists, and literary people. Gardeners do not murder their wives, nor do they commit suicide. Their chief drawback is that they bring a good deal of mud into the house. Gardening puts old and young on an equal footing; for the experience of "the old hand" is not offset by the superior strength, energy and boldness of the beginner.

There is no rigid plan to follow in beginning a garden. The owner may have only imperfect notions as to what can be done with the site, which is only to be explored by actual trial. Thus, our curate has a pretty knowledge of plants. He began with a sloping, virgin field where sheep had grazed. He dug somewhere and put in an alpine. It throve. The process was repeated at another spot. These isolated features were gradually combined into a coherent whole—a pleasure to the curate and his parishioners. This illustrates the spirit of one method of approach.

If at first you feel overwhelmed by the unlimited choice of plants, let your range of selection be restricted by some arbitrary means, such as the alphabet. Thus the bed along by the wall shall be furnished only with plants whose generic names begin with G, another with A. Here are some of the G's (a letter not as rich as some in forms): Garrya, Gaultheria, Genista, Gunnera, Gagea, Galanthus, Gladiolus, Galtonia, Galega, Gentiana, Geranium, Geum, Gypsophila, Gaillardia, Gazania, Gilia, Glacium, Gnaphalium. These offer plenty of problems to the gardener—cultural and artistic—with reasonable hope of succession through the year, and suitable combinations of form and colour. Owing to the restrictions imposed by the method, it becomes necessary to exploit fairly fully the possibilities of particular genera, and no garden will suffer from a few cases of this sort of elaboration.

Does a botanist make a good gardener—a more successful gardener than his uninstructed neighbour? From his knowledge of plant forms and plant requirements it might be expected that he should, and doubtless the knowledge accruing at Rothamstead and other stations is becomingly remunerative. Still, much of the outfit of the successful cultivator is still empirical, and we hardly know why we fail or succeed. A bright intelligence will, in gardening, as in other fields, carry you further than much stored learning. Still, a knowledge of botany, of the form, range and classification of plants, and of their behaviour in their natural habitats, adds enormously to the breadth

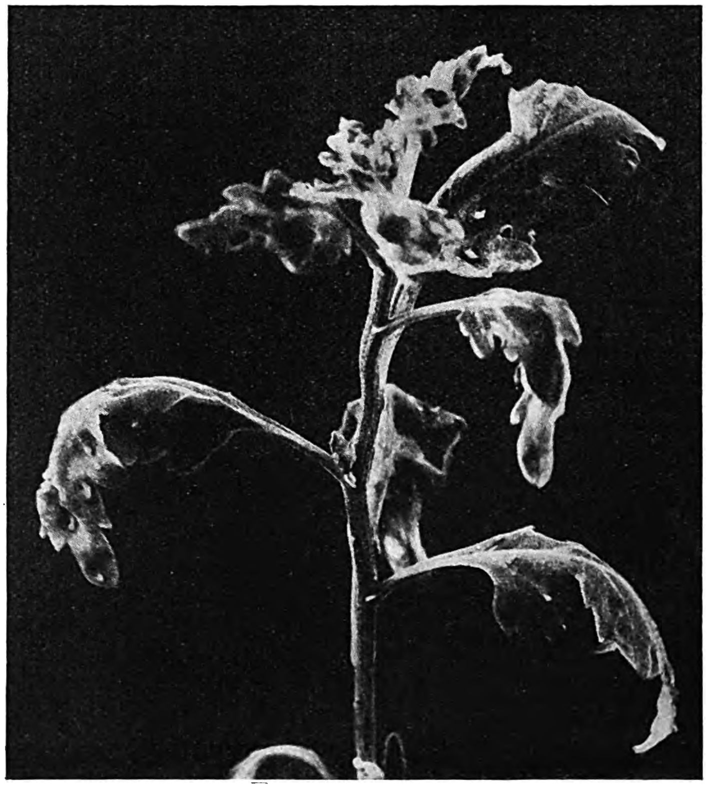

FIG. 177.—CHRYSANTHEMUM CHESHUNT WHITE WITH GALLS OF THE MIDGE ON UPPER FOLIAGE. (Reduced ½; see p. 388).

of view and to the enjoyment of the gentle art; whilst in special lines, especially propagation and breeding, it is still more important.

Nothing is more wonderful than the responsiveness of plants when treated properly. Most of us have to learn how to grow each separate species by repeated trial, but occasionally the faculty is instinctive.

A friend of mine met with indifferent success until he had the happy inspiration of asking his wife to indicate where seedlings should be put, and getting her to put them out. He then began to get prizes at local shows. His wife had perfect hands and was rapid to observe; she could tell in a few hours whether a plant would thrive, where most people would require a week. Her special gift became known to her friends and they brought her sick plants in pots to be cured. The secret of this "nursing home" was that a given plant would be placed experimentally in a particular position, and my friend's wife would recognise in half-a-day whether it was recovering; if not, its station was changed till the patient was suited. She claimed no special powers—merely certainty and rapidity of judgment.

Should anyone crave for a new departure in gardening, let him take up the cultivation of a sand dune and a salt marsh. This means the acquisition of a suitable sector of the shore line, and there is no happier environment. In this happy spot he will gradually assemble every dune and marsh plant from temperate latitudes all the world over. And such as he can acclimatise he will grow mingled with the native plants in the most natural manner possible. This field is hardly explored at all and is full of promise. *F. W. Oliver.*

MESEMBRYANTHEMUM.

(Continued from p. 370.)

1. **G. arrectum, N. E. Br.,** in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9, Fig. 5. (Figs. 178 and 179).—Leaves 2–3 (rarely 4) pairs to a growth, with the pairs crossing one another obliquely, suberect or ascending-spreading, usually more or less curved, 2–3 inches long, 3½–5 lines broad near the base and 3–4 lines thick, variable, sometimes somewhat cylindric and more or less flattened on the upper or inner face, or semiterete, or more or less trigonous, usually without but sometimes with a keel on the back, acute or subobtuse, smooth, glabrous, light green, not at all glaucous nor dotted. Flowers subsessile or on pedicels 1–2 lines long and 1½ line thick. Calyx 4-lobed; lobes 3–4½ lines long and as much in breadth, broadly ovate, obtuse, all with membranous margins. Corolla 2–3 inches in diameter, cup-shaped, expanding in sunshine, scentless; petals about 50, in one series, lax, 12-16 lines long, about 1 line broad, linear, very obtuse or subtruncate and notched at the apex, bright yellow on both sides. Stamens erectly spreading in a ring; filaments pale yellow; anthers darker yellow. Stigmas 7–8, widely spreading, about 2 lines long, plumose, acute, pale yellowish-green. Capsule sub-globose, with a high dome-like top, 3–5 lines in diameter, with 7–8 valves and cells.

Swellendam Division: at Sevenfontein, Pole Evans, 6,922! Ladismith Division: Near Adams Kraal, 1,400 feet above sea level, Muir 3,904! and near Plathuis, Muir 3,909!

Fig. 178 is from a photograph taken in South Africa by Dr. Pole Evans of the plant sent to me as it grew there, and Fig. 179 (reproduced from *The Gardeners' Chronicle*, Vol. LXXI, p. 9) represents the very same plant after I had cultivated it for several months, from a photograph taken by my daughter. These two figures well illustrate the difference that sometimes occurs between these plants as they are seen in a state of rest under natural conditions, and as they are seen in this country under cultivation.

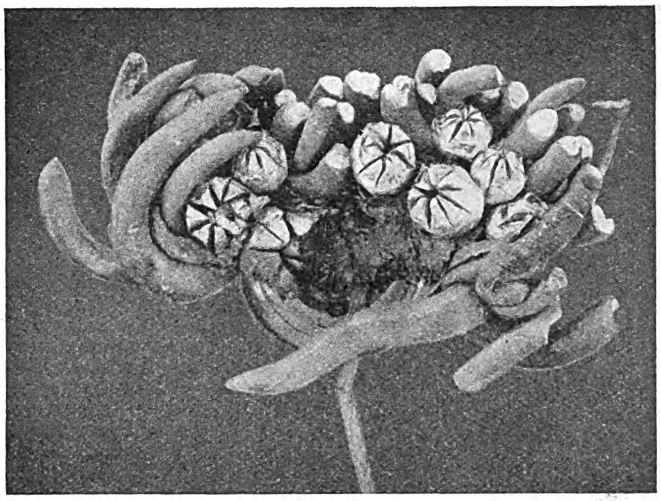

FIG. 178.—GLOTTIPHYLLUM ARRECTUM, N. E. Br.
Imported plant; natural size.

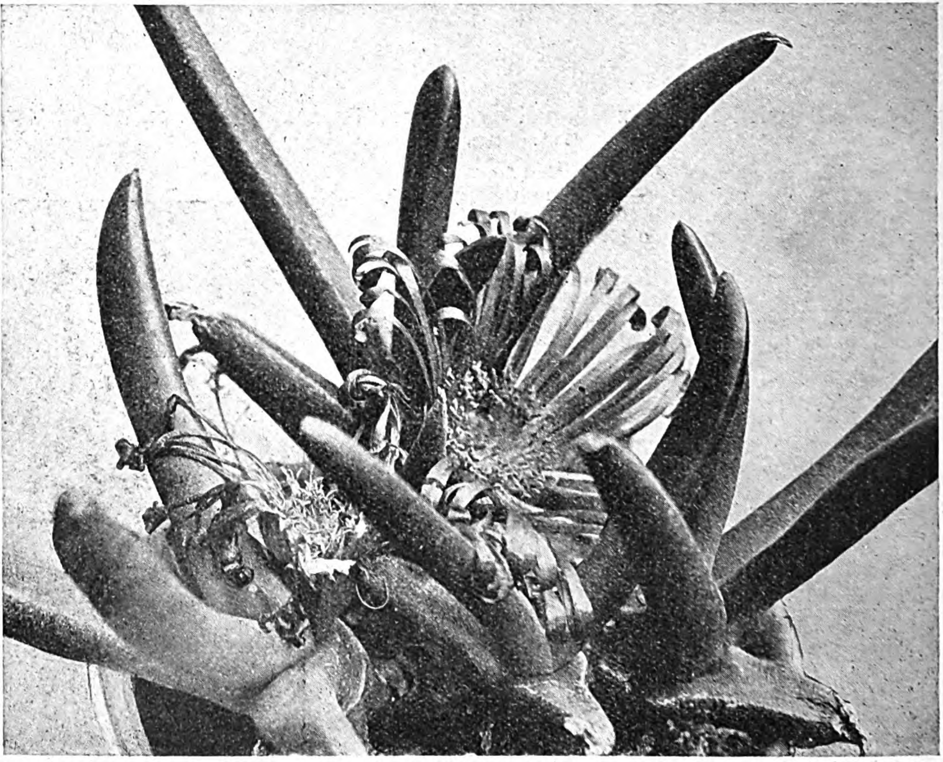

FIG. 179.—GLOTTIPHYLLUM ARRECTUM, N.E. Br.
The same plant as in Fig. 178, after cultivation for several months.

2. **G. difforme, N. E. Br.,** in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 22.—Growth or branches more or less decumbent, with about 3 pairs of leaves to each and the pairs obliquely crossing one another. Leaves mostly 1½–3 inches long, sometimes longer, ¼–½ inch broad, semiterete, flat or slightly concave on the face, very convex on the back, and usually with, but sometimes without, a hump or tooth on each margin above the middle, the longer leaf of each pair with the apex produced beyond the flat face into a compressed acute or blunt point, and the smaller leaf simply acute or obtuse, deep green, pellucid-dotted; according to Haworth, some of the leaves have a slight twist from above the middle, and some of them are tipped with a soft, straight, curved or hooked bristle or apiculus. Pedicel very short, 4-angled thickened upwards and indistinguishably passing into the calyx-tube, which together with the pedicel is represented in the figures as about 9–12 lines long. Calyx irregularly 4-angled, 4-lobed, the larger lobes sharply keeled, the smaller membranous. Corolla 2–2¼ inches in diameter; petals lax, in about 1 series, 9–10 lines long, ½–⅔ line long, yellow.

Mesembryanthemum difforme, Linn. *Sp. Pl.*, ed. 1, p. 487, partly, as to M. foliis difformibus, Dillen. *Hort. Elth.* p. 252, t. 194, f. 242 (not 241), and Haw. *Obs.*, p. 169 (1795) not of Salm Dyck nor Berger.

South Africa: Locality unknown, in cultivation before 1732, according to Aiton.

This species is unknown to me, and the above description is compiled partly from Haworth's original description of it, and partly from the Dillenan figure, and an original drawing of the plant in the Kew collection.

It seems to be similar to G. semicylindricum, but distinctly differs by its short 4-angled pedicel.

The two figures in Dillenius, *Hortus Elthamensis*, t. 194, mentioned above, were considered by Linné to represent one species, but Haworth retained the name M. difforme for Fig. 242, and gave the name M. semicylindricum to the plant represented at Fig. 241, which distinctly differs by its more terete and longer pedicels. The plant figured by Salm Dyck as M. difforme I now find is merely a form of G. semicylindricum and not a distinct species as in my former account of this species I was inclined to suppose. *N. E. Brown.*

(To be continued).

NOTICE OF BOOK.

Economic Fruit Farming.

DURING recent years a considerable impetus has been given to the study of agricultural economics, and the results obtained have proved helpful to farmers. This, however, is not the case with land devoted to fruit farming, and, therefore, a publication,* which is claimed to be the first of its kind, dealing with the economy of a fruit farm leads us to hope that this important branch of production may, in the future, receive more attention from the economist than it has in the past.

It is obvious that in order to arrive at definite conclusions of widespread application, the results from a large and representative number of fruit farms should be obtained. In this case the results are from one farm only, but the information emerging from the enquiry will prove of the greatest value. Though, in many cases, limited in their application, the conclusions which refer to such subjects as marketing will be of universal importance.

The farm under review is situated in east Norfolk, a district were fruit-growing is still in its infancy. Little is known of the possibilities of Cherry, Plum and Pear growing, and the development of this new industry has mainly been along the lines of soft fruit growing. Strawberries, Raspberries and Black Currants have formed the main crops. The latter have been widely planted, and this part of the country now forms one of the most important Black Currant growing areas in Great Britain. The soil is derived from two formations, the Norwich Crag and the Glacial Drift. That derived from the former is a coarse sand and is less retentive of moisture than that from the glacial loams and gravels. It might be expected that growing fruit on such land would not be a commercial proposition, even though the rainfall of twenty seven inches is slightly higher than the average for the eastern counties. That it can be done, the authors point out, is due to bands of silt which hold up the surface water, and where these do not exist, to a relatively high water table. A slightly higher rainfall in July than the average for East Anglia must also assist.

During the years 1925 and 1926 the yield of Strawberries proved considerably higher than the average of the country. A profit of £48 and £9 per acre was obtained. The lower return in 1926 may be accounted for by the difficulties of marketing owing to the strike, by the lower quality of fruit owing to bad weather at the time of marketing, and because of a lower yield due to frost. Black Currants, which are usually taken after Strawberries, left a profit of £8 and £17 per acre. Many varieties have been tried on this farm and interesting data have been obtained. In the main, the tendency is to plant as great an acreage as possible of Baldwin, though it is pointed out that there are several disadvantages to growing only one variety.

Apple growing is only just emerging from the experimental stage, many varieties having proved unsuitable to the soil of the locality, while very few are satisfactory. With the low yields, far below the average, it is only in years when the price of Apples has been high that it has been possible to make a profit. In 1925 there was a loss of over £12 per acre on fifty-one acres, but the 1926 crop left a profit of nearly £4 per acre.

Mr. Wright and Mr. Carslaw devote considerable space to marketing, and their investigations have been the more complicated by the many units of measurement employed in different markets. The *Report on Fruit Marketing*, recently published by the Ministry of Agriculture, has shown how the buyer would welcome a standardisation of packages and purchase by net weight. That selling by net weight not only assists sales but probably improves the price is a conclusion arrived at in the report under review. An interesting analysis of the cost of marketing from plant to market, shows that, in the case of Strawberries, the cost of picking and marketing the crop is almost equivalent to the cost of growing it up to the picking stage. Since the cost may fluctuate two to three shillings per hundredweight on account of railway freight, it is all important to the grower to study the prices obtainable in the different markets in conjunction with the relative cost of transport to these centres.

The provision of large quantities of manure necessary for fruit growing is always a difficulty that has to be met. In this case, two-thirds of the manure is produced on the holding by pigs, and the remainder bought. Green manuring has been tried with only moderate results, since considerable difficulty has been experienced in obtaining a good germination of the catch-crop owing to the dryness of the soil. Mulching with litter has been tried but proved unsuccessful. Folding pigs in the orchards has been adopted, but the success of this system largely depends on the degree of management. Pigs kept in orchards require careful treatment and do not readily fatten, and thus there must be a considerable store period before the animal is fit for the market. For pork production the system is not sound, but this is not the case with pigs to be fed for bacon during the following winter. The sales of pigs have consisted almost entirely of fat bacon pigs, and very satisfactory profits have been obtained during the two years, owing, no doubt, to the high prices ruling at that time.

Information of interest is contained in the table of farm assets. The total value, excluding landlord's capital, amounts to £8,000, or £60 per acre, a figure nearly four times as high as that for East Anglian arable farms. The average output per acre for the two years was £20 17s. 6d., as compared with £6 19s. 7d. from an arable farm.

To fruit growers, an enquiry of this nature must prove helpful, and will, we hope, afford a stimulus for the elucidation of the many problems with which the industry is faced. To the economist the enquiry is of special interest, for it is the first investigation of its kind that attempts to deal with the many difficulties, which are far greater than those met with in costing ordinary farming undertakings. *W. R. P.*

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* *The Economy of a Norfolk Fruit Farm*, 1923-26, by C. W. B. Wright, M.A. (Lecturer in Horticulture) and R. McG. Carslaw, M.A. (Dip. Agric. Econ.), University of Cambridge, Department of Agriculture. Report No. 7.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131–137).
(Continued from p. 371.)

ENGLAND, S.W.

HEREFORDSHIRE.—The Strawberry crop here promised to be a heavy one, but the drought which lasted in this district for upwards of two months, prevented the fruits from swelling, although rain fell later and they improved somewhat. There has been a good average crop of fruits here, with the exception of Pears and Plums, but the quality, generally, has been good. Our soil is a rather cold clay. *J. B. Cooke, Ledbury Park Gardens, Ledbury, Near Hereford.*

SHROPSHIRE.—Our season is usually rather late on account of our very heavy soil on a subsoil of clay. The show of blossom in the spring was remarkable. We had 10° of frost on April 30, and the only tree that suffered was Astrachan Red Apple. All other fruit trees are clean, well-set and growing strongly. The fruit trees here are sprayed regularly with a popular brand of insecticide. During the past few years I have paid special attention to spraying and feeding Black Currants, and other small fruits, which have compensated us for the extra labour. Four years ago, we had a new stock of Black Currant Boskoop Giant, which this season was free from big bud, and carried a wonderful crop of first-class fruits. *Roger F. Jones, Oteley Gardens, Ellesmere.*

——All fruit trees flowered exceptionally well, but owing to cold winds and frosts, Apples and Pears are not average crops. The following varieties are bearing fairly well:—Apples: Frogmore Prolific, Mère de Ménage, Warner's King, Emperor Alexander, Bismarck, Ecklinville Seedling, Lane's Prince Albert, Crimson Bramley, Winter Nonesuch, Blenheim Pippin, Charles Ross and Worcester Pearmain; Pears: Doyenné du Comice, Emile D'Heyst, Beurré Bachelier, Louise Bonne of Jersey and Catillac. Apple Lord Suffield set well but the fruits have dropped badly. The earlier blooms of Strawberries were entirely spoiled, but with the development of more genial weather followed by rain, the later blooms set well, and the plants showed no sign of the disease which is causing so much anxiety in many gardens. Raspberries set well and there was a heavy crop of well-developed fruits. Black and Red Currants were also very satisfactory. Plums set badly and Damsons were a complete failure for the second year in succession. This garden is situated very high, is sloping, and exposed fully to the west. The soil is a sandy-loam on a subsoil of clay. *George Robinson, Gannow Hall Gardens, Welsh Frankton, Nr. Oswestry.*

——Apples and Pears blossomed well, but 17° of frost spoiled the prospects. Plums and Damsons set well, but late frosts left their mark. Black Currants were a good crop. *A. Wardle, Loton Park Gardens, Alberbury, Near Shrewsbury.*

——There were prospects of a splendid crop of fruits, but the disastrous April frosts shattered these prospects, with the exception of bush fruits, which were able to withstand them. Strawberries suffered very severely. Caterpillars have been unusually scarce this season. The soil is a very deep, tenacious boulder clay, bad to work and difficult for plants to become established in. *E. F. Hazelton, Yeaton Peverey Gardens, Bomere Heath, Shrewsbury.*

WORCESTERSHIRE.—The fruit crops generally are extremely partial, plantations in some places carrying heavy crops, whilst near-by, but in low-lying situations, there is an absolute failure of Apples, Pears and Plums. Raspberries have been a very good crop, the showery weather suiting them. Bramley's Seedling Apple appears to have suffered the most. *William Crump, Oakridge, Richmond Road, Malvern Link.*

——The fruit crops in this district are very disappointing, although Gooseberries, Black Currants and Raspberries were very plentiful. Of Apples, Charles Ross, Worcester Pearmain, Lord Grosvenor, Warner's King, Lord Suffield and Lane's Prince Albert are carrying good crops, but Pears are very scarce. Our soil is of a fairly heavy nature. *Ernest Avery, Finstall Park Gardens, Bromsgrove.*

——The fruit crops in this district are disappointing, after the splendid show of bloom. The severe frost on April 29 did a lot of damage in the surrounding district, but this garden escaped, the thermometer only falling to freezing point. Apples Charles Ross, Lane's Prince Albert, Peasgood's Nonesuch and Allington Pippin, carried good crops, while Beurré Rance, Louise Bonne of Jersey and Conference are our best Pears. Strawberries were of good quality and the variety The Duke cropped heavily, but the season was a short one owing to the heavy rains. Loganberries and Raspberries had very good crops. The soil is heavy on a clayey subsoil. *John Melrose, Davenham Gardens, Malvern.*

WALES.

CARDIGANSHIRE.—All fruit trees in this district flowered profusely, but the early and late flowering varieties have set the best crops. The weather was not so favourable for the mid-season trees. The following fruits are bearing good crops.—Cooking Apples: Bramley's Seedling, Lane's Prince Albert, Annie Elizabeth, Newton Wonder, King's Acre Pippin, Bountiful and River's Early Codlin. Dessert Apples: Beauty of Bath, Gascoyne's Scarlet Seedling, Christmas Pearmain, Mr. Gladstone, Duchess' Favourite, Charles Ross, Worcester Pearmain, and Langley Pippin. Pears: Williams's Bon Chrétien, Thompson's, Pitmaston Duchess, Autumn Nelis, Souvenir du Congrès, Conference, Beurré de Arenburgh, Triomphe de Vienne and Clapp's Favourite. Plums: Victoria, Czar and Coe's Golden Drop. The soil here is heavy and wet, overlying slaty rock. *W. Phillips, Derry Ormond Gardens, Llangybi.*

(To be continued.)

FRUIT REGISTER.

APPLE CARDROSS GREEN.

CARDROSS GREEN is a kitchen Apple, large and round, green in colour, as its name implies, with white flesh. It is juicy, keeps until the end of June in splendid condition, and cooks well. During the past eight years I have worked a stock of seven hundred Apple trees, 125 varieties in all. The garden is on gravel and canker is rampant. I have now selected six varieties that have proved their worth, and Cardross Green is the only kitchen Apple I shall grow in the future. This variety has stood out alone as being the best cropper. When the grafts are twelve months old the little trees bear fruit. I have not at any time seen this variety in a nurseryman's list. My father grew it in the north many years ago, and the crop never failed. The difficulty I have had up to now has been to procure (from eight trees) enough growths for grafting purposes. I feel sure that if Cardross Green will grow and flourish here, it will grow anywhere, and ought to be much more widely known by gardeners who are desirous of obtaining a first-class Apple that crops every year.

The other varieties that have done well are Laxton's Superb; this is a grand dessert Apple, and I sent fruits of it to London last season at the end of May. Lord Lambourne comes next on the list, and until Messrs. Laxton's have something better, I am growing these two varieties extensively. Rosebery crops splendidly each year. Lastly there are Rival and Allington Pippin. These six are the only varieties that have cropped each year. Many other varieties carry a crop once in three years; therefore, so soon as I found the above six varieties were fruiting every year, I started to clear the other sorts, and so I propose to continue the work. *A. Allardice, Burwarton, Bridgnorth.*

PLUM ISABELLA.

THIS variety is but infrequently planted and should, I feel sure, be given greater attention. In a west-country garden, trees growing against a west wall rarely fail to carry a good average crop of fruits of first-rate quality. This Plum bears fruits of medium size, obovate; skin deep dull red, paler where shaded, and occasional dots of a darker colour are displayed. The flesh is yellow, very rich and juicy and adheres to the stone. The tree is of moderate growth, the shoots downy; the fruits ripen in early September.

Dr. Hogg, in his *Fruit Manual*, states that Plum Isabella was raised by Mr. Thomas Plumley, of Ashton, near Bristol, about the year 1824, from seed of Red Magnum Bonum. It was first brought into notice by Mr. George Lindley, when he was employed in the nursery of Messrs. Miller and Sweet of that city. *Ralph E. Arnold.*

VEGETABLE GARDEN.

MUSHROOMS.

WHEN collecting manure for making up Mushroom beds we have retained much of the short straw. If the latter has been well saturated with urine and beds requiring about two cart-loads of material are to be made, this practice has invariably proved satisfactory. The bulk as collected would consist of about half manure and half straw. Small beds made on the same principle have not given such good results. The reason for this is, I think, that the straw becomes too dry.

The temperature of such beds remains too high for spawning for a considerable time. During this period evaporation is rapid, and while the surface of the bed is in a suitable condition of moisture when the spawn is inserted (and remains in this condition for some time), the centre and bottom of the bed become too dry owing to the amount of strawy matter employed. This experience has been obtained in dealing with a Mushroom house in which the atmosphere is inclined to become too dry owing to its situation and the materials used in construction. Owing to the shortage of suitable manure, the collection of the material in sufficient quantities is rather a prolonged business. To prevent undue loss of ammonia a little loam is mixed with the manure. I am aware that some growers add the leaves of Beech and Oak to the material for the making of Mushroom beds, to increase bulk, but I have not tried this method. *C. Ruse.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Exogonium Purga.—A tuber of the Mexican Jalap was planted in July last year in a bed, mainly of leaf-mould, on the north side of an old Quince tree. A special mixture of peat, leaf-mould, loam, sand and broken crocks, was put round it to make it comfortable, and a square foot or so of ground was marked with stones put edgeways, so that it might run no risk of disturbance. Growth began soon and continued until winter. In May, this year, two shoots were observed above ground, and through the summer and autumn the twining stems have been running into the tree and interlacing themselves with Tropaeolum speciosum and the large white Convolvulus. The leaf and stem are, indeed, much like those of the Convolvulus, though darker, and with a touch of brown, and it is as well to point out to zealous weeders which is which. Now (October 31), the Convolvulus has died away and the Tropaeolum is following it, but the Jalap is as fresh as ever, and has celebrated the departure of the month by producing its first flower. This is also like that of its neighbour, the Convolvulus, but is of a warm, rosy-purple, a charming flower for the November garden. I believe that it should bloom earlier; perhaps the fact that it receives little direct sunshine accounts for its lateness. There are many buds still to open if the weather will give it a chance. Fortunately, to-day has been fine, so this handsome Mexican plant may have received a favourable impression of the climate to encourage it. Exogonium Purga (Ipomoea Purga) grew well in Canon Ellacombe's garden at Bitton. I regret to add that Mutisia decurrens, planted close by, to run into the same Quince tree, and assisted with an even larger proportion of broken crocks, has failed after making a hopeful start. *W. R. J., Cornwall.*

Judging at Flower Shows.—Anent "Nurseryman's" article in *The Gardeners' Chronicle* of October 29, I may state that he is not the only one to find fault with the erratic way in which some classes are judged. At a recent exhibition it was necessary to call the attention of the judges to their decision in a plant class. The error was adjusted as speedily as the mistake was made, but a perusal of the rules governing the class would have prevented a mistake. Those entrusted with the judging were experts, so that it can only be surmised that they were in a hurry. *Nemo Naxitur Tempo.*

Tall Sweet Peas.—"J. T. W." (October 8) wonders whether any readers have Sweet Peas taller than his. Ours were from thirteen feet to fourteen feet nine inches high. They were grown on stakes and disbudded until about August 10, after that date they were not disbudded, or they would probably have been taller. The first blooms were picked at Whitsuntide, the last during the first week in October. Some of the early flower stems were twenty-two inches long and one stem had eight blooms. The seeds were sown in three-and-a-half inch pots, during the first week of January and the plants were set out early in April. *F. Jackson, Brancaster, Kings Lynn.*

Solanum crispum.—This beautiful member of the Potato family is one of the finest hardy plants for training up a wall. Early in June I saw a particularly fine specimen, about sixteen feet high smothered with bloom, growing against one of the buildings of the Mental Hospital at Knapsbury, in Hertfordshire. It was planted some years ago in a small pocket of soil, between the base of the wall and a cement path, by Mr. Jennings, the Garden Superintendent, and he is justly proud of the success of his "Potato Tree" in this not too congenial position. The bluish-purple flowers normally open about the middle of May, and are not fragrant. The calyx is campanulate and five-toothed; the corolla is also five-cleft, and slightly rotate. The leaves are simple, about three inches to four inches long, usually ovate in shape, and crisped or curled along the margins. It is from this character that the plant obtains its specific name. During the same visit in early June, I also noticed a fine example of the Tulip Tree, Liriodendron tulipifera. It was growing in a lawn in a sheltered enclosure, and, writing from memory, I should say it was forty feet or more high. The widely-spreading branches, clothed with the peculiar leaves, were covered with large, plump flower buds just about to open. I was sorry not to see the specimen in full bloom, for one too rarely comes across such a well-grown specimen of this hardy deciduous tree. *R. K.*

Apples in a Scottish Garden.—In many parts of Galloway, Apples and Pears are grown remarkably well. The climate along the shores of the Solway Firth is good, and the soil suitable. In the beginning of October, I had the pleasure of visiting the gardens at Balmae, Kirkcudbright. Balmae was for many years the home of the late Countess of Selkirk, and is now the residence of Mr. and Mrs. Duncan, who are both enthusiastic horticulturists. A large number of single cordons and bush Apples have been planted during the past five years, and some remarkable crops were obtained this season. I was told, however, that the crops were even better in 1906. I propose to confine my remarks to the wall cordons. They were exceptionally healthy; the fruits of all varieties remarkably clean, and the colour equal to that obtained in the south. Cox's Orange Pippin was carrying a heavy crop of good-sized fruits; it crops well at Balmae, and, of course, is in great demand for dessert. James Grieve I have never seen finer; the fruits were large and of grand colour, while the flavour was delicious. There were still a few fruits left on several cordons of Lady Sudeley, and although I have known this variety all my life, and have always looked upon it as one of the easiest of all varieties to name, it was some considerable time before I could name it. I never saw anything approaching these specimens for size and colour. Since visiting Balmae, I have received a few notes on the weights of some of the crops. Six cordons of Charles Ross, each averaging eighteen fruits, gave a weight of 60 lbs. 12 ounces. The heaviest fruit was 12¼ ounces, and the average weight 9 ounces. Golden Reinette is a great favourite here; it crops well and the flavour is excellent. Ellison's Orange was carrying a very fine crop of beautiful fruits; it is considered one of the best and one of the most reliable dessert varieties. Superb had a nice crop, and I was told that it makes a much better bush than Cox's Orange Pippin, and is much healthier; the flavour is equal to that of Cox's Orange Pippin; in fact, it has already been named the "Cox of the North." It is preferred to Lord Lambourne. Cutler Grieve, although cropping well, and colouring beautifully, is not looked upon with much favour. The American varieties have been tried at Balmae but, so far, have been utter failures; some varieties have made excellent cordons, but the fruits have never approached the excellence of the British varieties. Cooking varieties were very good. Encore, Bramley's Seedling, Lane's Prince Albert, King Edward, Warner's King and Ecklinville were all bearing heavy crops. Mention must be made of Peasgood's Nonesuch; although a very shy bearer, it produces enormous Apples, and one specimen I saw turned the scales at 19 ounces. Several examples of Rev. W. Wilks were equally as large, but not nearly so heavy. The magnificent crops, and the splendid condition of the trees, reflected the greatest credit both upon the owners and their skilful gardener. *Solway.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 3 and 4.—That there is no diminution in the great popularity of the Chrysanthemum was abundantly evidenced at the annual show of the National Society, held at the Royal Horticultural Hall, Westminster, on these dates. The hall was filled with Chrysanthemums and there was an enormous attendance on the opening day. Thanks to the admirable arrangements, which made the show run so smoothly, it was possible to open the doors before the advertised time, and the hall was quickly filled with enthusiasts. There was a record attendance throughout the afternoon and well on to the evening the hall was crowded—often, uncomfortably so—and progress was exceedingly slow. This is one of the penalites of success and not to be avoided, even under the best management. No doubt the new and larger hall will be available for the next Chrysanthemum Show.

As to the flowers themselves, it was agreed by those qualified to express an opinion that the quality of the leading exhibits reached a high standard of excellence. Indeed, it would be difficult to imagine finer exhibits than the twelve vases of Japanese blooms shown in vases by Captain R. B. Brassey, or the thirty-six blooms staged on boards by the Society's President, the Hon. Sir John Ward. The Experimental Class, in which the Society provided show boards allowing a space of ten inches from bloom to bloom, was an unqualified success. The seven exhibitors staged magnificent blooms whose beauties could readily be admired.

As will be inferred from the above remarks, the large Japanese varieties were well represented at the show, but there was rather a falling off in the number of the Singles and, in the competitive classes, the dainty little Pompon varieties were absent. That these pigmies of the Chrysanthemum world have charm and decorative value was abundantly clear in the delightful vases of them in Mr. H. J. Jones's magnificent trade exhibit. The old-time incurved varieties were shown in fair numbers in the various classes, though it was interesting to note that better specimens were shown in vases than on boards.

Thirty-five varieties were submitted to the Floral Committee, who granted six First Class Certificates and wished to see again Gordon Curry, a large Japanese variety somewhat of Mrs. George Monro, junr., type and colouring. This variety was shown by Mr. E. H. Pearce, Long Sutton Gardens, Basingstoke.

First Class Certificates.

Blackpool.—This is a splendid exhibition Japanese bloom. The narrow, flattish florets hang gracefully, making a deep, compact flower of great value for the show board as well as for house decoration. The colour is a rich, velvety-crimson, with a slight shading of maroon and a golden reverse.

Southampton.—Another excellent Japanese variety of large size. The long, broad florets, which curl gracefully at the tips, are of bright yellow colour. Both varieties were shown by Mr. H. Woolman.

Monument.—A large, Incurved, Japanese variety of the best exhibition type. The broad florets are milk-white.

Mrs. Keith Luxford.—An exhibition Japanese variety of considerable depth. The long, drooping florets are of bright red-chestnut colour and have golden reverses (see Fig. 169, p. 381). Both varieties were shown by Messrs. Keith Luxford and Co.

Edith Seymour.—A large exhibition Japanese variety with narow, drooping florets of light chestnut colour and a golden reverse. Shown by Captain J. Dalgety (gr. Mr. Baxter), Lockersley Hall, Romsey.

Charles Davis (1927).—A large exhibition Japanese variety of great value. The bright yellow florets are very long and narrow and are twisted towards the ends, making a graceful bloom of great depth. Shown by Mr. H. J. Jones.

Open Amateur Classes.

Although there were only two exhibits of thirty-six Japanese blooms, in twelve varieties, three blooms of each, shown in vases, the class was one of the chief features of the show on account of the outstanding excellence of the exhibits. The first prize was won by Captain R. B. Brassey (gr. Mr. James Quinn), Cottesbrooke Hall, Northampton, with a magnificent exhibit. The blooms were all of great size, of good clear colours and in perfect condition. The varieties in this superb exhibit, were Mrs. B. Carpenter, Mrs. A. Holden, Julia, Rosemary Simmonds, Mrs. J. Gibson, Mrs. P. Murray, Mrs. Gilbert Drabble, Majestic, Duchess of Westminster, Golden Rigby, Norman Chittenden and Victory. The vase of the last-named was considered by many to contain the finest bloom in the show and the whole exhibit was awarded *The Gardeners' Chronicle* Silver-gilt Medal as being the finest in the amateurs' classes. The second prize was awarded to the Hon. Sir John Ward, K.C.V.O. (gr. Mr. C. Beckett), Chilton, Hungerford, for an admirable collection which included splendid vases of Majestic, Mrs. H. Wells, Mrs. B. Carpenter, Red Majestic, Mrs. A. Davis and Major Wheatley.

Five exhibitors set up three vases each of six Japanese varieties in specified colours. The best was from the Dowager Lady Annaly (gr. Mr. D. Cameron), Holderby House, Northampton, who showed Red Majestic, Mrs. A. Davis, Mrs. Gilbert Drabble, Mrs. George Monro, junr., Mrs. P. Murray and Majestic in splendid condition. Sir John Ward was second, and his best varieties were Mrs. A. Davis, Red Majestic and Mrs. A. Holden. F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, was third in this large class, and he included a vase of particularly good blooms of the richly-coloured Mrs. George Monro, junr.

The competition in the Holmes Memorial class was not so good as usual, though the two competitors set up splendid blooms. The need for larger show boards was very evident in this class, for all the blooms were of such large size that they were greatly crowded and it was difficult to appreciate their full values. Sir John Ward was first with blooms of great depth and in excellent condition. The disposal of the colours was well done and, except for the unavoidable crowding, the effect was very good indeed. Space does not permit mention of all the thirty-six varieties, though their qualities would warrant it, but we mention the following as being typical of this very fine collection: Victory, Mrs. F. Slack, Mrs. Gilbert Drabble, Tom Abbot, Madame Stuart, Julia, Red Majestic and Mrs. George Monro, junr. Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was a good second in this important class, and his very best blooms were of Mrs. R. C. Pulling, Mrs. Gilbert Drabble, Majestic and Belle Chinoise.

Of the four exhibits of twenty-four distinct Japanese varieties, the best was shown by Captain R. B. Brassey, who had particularly good specimens of Dawn of Day, Mrs. A. Holden, Julia, Victory, A. J. Cobb, Golden Rigby and Duchess of Westminster. R. L. V. Sherwood, Esq. (gr. Mr. J. Heath), St. Gatien House, Newmarket, was an exceedingly close second, and he had splendid blooms of Majestic, Yellow Majestic, Dawn of Day, Ajax, Mrs. A. Brown, Mrs. G. Lloyd Wigg and Princess Mary.

As we have already mentioned, the Experimental Class was very successful, and no fewer than seven competitors staged their twelve distinct Japanese varieties on the boards provided by the Society. The general quality reached a high standard of excellence, and the class attracted a deal of attention. Lady Annaly won the first prize with a superb collection. The varieties were Julia, Marjorie Woolman, Melody, Autumn Tints, Majestic, Mrs. E. Tickle, Red Majestic, Mrs. P. Murray, Dawn of Day, Victory, Mrs. A. Davis and Mrs. A. Holden. In his second prize collection, R. L. V. Sherwood, Esq., had especially fine specimens of Red Majestic, Mrs. F. J. Fleming, Majestic, Cissie Brunton, Yellow Majestic and Louisa Pockett. Mrs. Thomson (gr. Mr. L. Barnard), Long Walk House, Windsor, was third in this important class, and included Mrs. C. Swainland, Majestic and Mrs. Gilbert Drabble of great merit.

The class for six distinct Japanese varieties drew six exhibits. The first prize was won by R. L. V. Sherwood, Esq., who staged magnificent blooms of Mrs. B. Carpenter, Red Majestic, Queen Mary, Princess Mary, Mrs. A. Davis and Majestic. Mrs. Constance Pearson (gr. Mr. C. Hodgson), Acton Place, Sudbury, Suffolk, was a very good second, showing Mrs. R. Luxford, Majestic, Viscount Chinda and Julia in splendid condition. Col. Charles Brook (gr. Mr. T. Cload), Kinmount, Arran, was third, and he had very good blooms of Majestic, J. W. Pockett and Julia.

The competition was not quite so keen as usual in the classes for three blooms each of specified colours. The best white was Mrs. Harold Wells, shown by Sir John Ward; and Cissie Brunton, shown by R. L. V. Sherwood, Esq., second. Mrs. George Monro, junr., was shown by the first three of the four exhibitors in the class for any crimson variety. W. S. Graves, Esq. (gr. Mr. J. Marshall), Newalls, Horsham, was first, and Lady Annaly was second. Princess Mary was the best yellow Japanese variety, and it was shown by R. L. V. Sherwood, Esq., who was first, by Mrs. Sofer (gr. Mr. A. S. Gooden), Amport St. Mary, Andover, and two others of the five exhibitors in the class. There were six exhibitors in the class for three blooms of any other colour, where Lady Annaly was first with Red Majestic, and R. L. V. Sherwood, Esq., was a close second with Majestic.

The Incurved varieties were shown in larger numbers than on recent occasions. S. W. Wickens, Esq., Southsea, was first with eighteen blooms in six varieties, shown in vases. This was a good class, and illustrated that when well-grown and arranged with taste the Incurved Chrysanthemum has considerable decorative value. Mr. Wickens, who showed very good blooms, indeed, of Golden Glory and Captain Kettle, was also first with a single vase of Incurved varieties. There were only two exhibits each in the classes for twelve and for six varieties, and G. H. Fisher, Esq. (gr. Mr. T. Finch), Down View, Purley, won both first prizes. F. C. Stoop, Esq., was first in the class for six vases of Decorative Chrysanthemums.

There was a falling-off, perhaps due to the lateness of the season, in the exhibits of Single Chrysanthemums, though the quality generally was very good indeed.

In the George Monro Challenge Cup class, which is for open competition, the exhibits of twelve vases of large Singles made an attractive display. The first prize was won by Viscount Hambledon, who included Augusta, Supreme, Bronze Molly, Sandown Radiance, Phyllis Cooper and Molly Godfrey in his admirable collection. F. J. Yarrow, Esq. (gr. Mr. A. Robertson), St. John's Wood, London, was a good second, and he staged especially fine vases of Golden Seal, Sportsman, Mrs. A. Robertson, Susan, Annette and Catriona. The first prize for six vases of Large Singles was awarded to the King's Acre Nursery Co., who showed very good vases of Mrs. Catlow, Hon Edith Smith and Susan. In the Open Amateurs' Section, F. C. Stoop, Esq., set up nine excellent vases of Large Singles, which included Phyllis Cooper, Susan, Enton Scarlet, White Model and Crimson King. F. G. Yarrow, Esq., was a good second, and his collection contained Sandown Radiance and Golden Seal of great beauty. Viscount Hambledon was first with six vases of the same type, and of these Catriona, Annette and Molly Godfrey were of great merit; F. C. Stoop, Esq., was second. A. E. Taylor, Esq., Winchester, showing Florrie King, was first for a vase of small Singles.

The various Decorative classes were well contested and included many tasteful arrangements. F. J. Yarrow, Esq., was first with a handsome vase of large Incurved blooms. Miss Hedges, Sydenham, showed the best basket and the best vase of Small Singles. G. Richardson, Esq. (gr. Mr. J. Vanstone), Tulse Hill, won first prizes with an excellent arrangement suitable for a hall table or a sideboard, for a vase of Large Singles, and a bowl of Chrysanthemums. A. Tickler, Esq., Slough, showing excellent blooms of Mrs. R. C. Pulling, had the best vase of five Japanese blooms; E. R. Crick, Esq., Green Lanes, London, had the best large vase of Chrysanthemums, and A. E. Taylor, Esq., was first with a handsome arrangement of twelve disbudded blooms of Large Singles.

In the smaller amateurs' divisions the leading prize-winners included Mr. B. Franklin, Stevenage; Mr. J. H. Goddard, Leicester; Mr. J. Clement, Hampstead; Mr. J. Rowlett, Sanderstead; and Mr. W. Staley, Gosport.

For the first time for many years, the Finchley Chrysanthemum Society was unable to compete for the Affiliated Societies' Challenge Trophy, which they have won on so many occasions. This year the Trophy was won by the Borough of Croydon Chrysanthemum Society (Secretary, Mr. Thomas Aley), with an admirable collection of flowers grown by various members. The Japanese sorts included Mrs. B. Carpenter, Mrs. George Monro, junr., Louisa Pockett, Majestic and William Rigby. The Incurved varieties were represented by Ondine and J. W. Streeter, and there were also admirable vases of Anemone-centred Single and Pompon varieties. The Forest Hill Society (Secretary, Mr. D. Turner), was second.

Non-Competitive Displays.

The wall space around the hall was not sufficient for the demand from the trade growers for their displays so some had to be set out on tabling. These large groups were an imposing feature of the show and attracted a great deal of admiration on account of the excellence of the blooms and the great taste displayed in their arrangement.

Mr. H. J. Jones set up a most imposing display in which all the types were represented by particularly well-grown blooms, and, as usual, great taste was displayed in the arrangement. The large Japanese varieties, which included Majestic, Wm. Rigby, Mrs. H. T. Hirst, Mrs. R. C. Pulling, Princess Mary and other exhibition sorts, were shown in tall stands at the back of the group. In the middle and at the front there were large vases of Red Uxbridge, Rayonante, In Memoriam, E. Reeves and White Ball of the market-sized varieties, while the chief Singles included Phyllis Cooper, Absolute, Crimson Dawn, West Hall Gem, Sandown Radiance, Miss Mary Powell and Oaklands. Several vases of mixed varieties of the dainty little Pompon varieties attracted much admiration, and these included Victorine, Golden Climax, Mary Pickford and Lilian Doty (Large Gold Medal).

In a group which was arranged with considerable skill, Messrs. Cragg, Harrison and Cragg displayed excellent blooms of the types valued for the highest class market trade. The Japanese varieties included Jean Pattison, rich bronze; Iolanthe, pale pink; Mrs. R. F. Felton, deep crimson; Atalanta, pink; and Fifi, sprays of bright rose flowers. Chief amongst the Singles were Ceddie Mason, crimson sprays; J. H. Blyth, rosy-scarlet, and Clytie, yellow sprays. The Incurved varieties were well represented by J. W. Streeter, of rich yellow colour. (Small Gold Medal.)

A comprehensive collection was arranged by Messrs. Keith Luxford and Co. This included large Japanese and market Japanese varieties, Singles and a collection of sprays cut from the open ground. The exhibition varieties included Thalia, U.21, of rich crimson colour; Mrs. R. C. Pulling, Lady Findlay and Belle Chinoise. Amongst the Singles were goodly vases of Portia, Everlasting and Cherub. There were also vases of Thora, an attractive mauve, Anemone-centred variety, and Winsome, a bright-scarlet Anemone-centred bloom. (Gold Medal.)

Several very good seedlings were shown by Mr. H. Woolman, while, amongst the exhibition Japanese varieties, he staged Belle Chinoise, Franconia, Aquitania, Mauretania and Mrs. T. Slack. White Ball, a small incurving bloom, Yellow Stewart Smith, Godfrey's Gem, Atalanta, Swardeston White, of good market size, and Joyce Strowlger, a mauve Single, were also noteworthy varieties. (Small Gold Medal.)

A considerable space was filled with large plants by Lady Macnaghten (gr. Mr. F. J. Bright), Sandhurst Lodge, Berks. The plants, which were from cuttings inserted during the second week of last December, displayed very skilful cultivation and they carried a large number of decorative blooms. One specimen of Blanche Poitevine had one-hundred-and fifty-six flowers. The other varieties were Pink Delight, Jean Pattison, Cranford Pink, Cranfordia, H. W. Thorpe and Gaiety (Gold Medal.)

An attractive collection of market varieties was staged by Mr. A. G. Vinten. These included Bronze Cranfordia, Fifi, Blanche de Poitou, R. A. Roots and Salmon Uxbridge, of the Japanese varieties, and Everbright, J. H. Blyth and G. Fox-Wilson of the Singles. (Silver-gilt Medal). Messrs. W. Wells and Co. were awarded a Silver-gilt Medal for an attractive and representative display.

A large collection set up by the King's Acre Nursery Co. was arranged the previous Tuesday and, in consequence, had lost most of its freshness. The large Japanese sorts included Majestic, Mona Davis, Mrs. R. C. Pulling and Edith Cavell. Absolute, Felicia, Mrs. George Hutt and Rayonante were also very attractive. (Silver-gilt Medal).

The value of undisbudded flowers was shown by Mr. Wm. Yandell, who set up pretty vases of Mrs. Phil Page, Delice, Goldfinder, Crimson Circle, Armorel, Betty Spark, Harvester and Red Almirante. (Large Silver Medal).

Silver Medals were awarded to Captain A. H. B. Wright, The Rookery, Marlow, for a splendid specimen plant of Mrs. K. Luxford; to Messrs. J. Cole and Son, who staged a meritorious collection of representative varieties; and to Mr. H. Clarke, who displayed a collection of small Japanese and Single varieties.

READING AND DISTRICT GARDENERS'.

At the fortnightly meeting held in the Abbey Hall, Mr. J. R. Lloyd presided.

The subject of the evenings lecture was "Chemical Manures and their Use and Influence on Plants," and the lecturer was Mr. A. J. Macself, Hamilton Road, Reading, who said in introducing his subject that it was of the utmost importance that the chemist and horticultural worker should work together to obtain the best results. Plants, like children, differ as to their requirements, for whilst a certain food suits one, it may have no effect on another; in fact, it may even do harm. Soils, again, vary, and it is necessary to know something of their texture before applying chemical manures to them. Also no two seasons were alike, and sun and weather play an important part in absorption by the plant. The following manures were touched upon, and their uses and advantages explained, namely, nitrate of soda, sulphate of ammonia, sulphate of potash, muriate of potash, nitrate of potash or saltpetre, sulphate of lime, basic slag, Kainit, bone-meal, dried blood and hoof and horn. The lecturer strongly emphasised the fact that it was necessary to add humus in some form to the soil, if chemical manures are used continuously. A very interesting discussion followed, and a very hearty vote of thanks was accorded to Mr. Macself.

In the competitive and non-competitive sections there were no less than sixteen exhibits. For six Onions, the first prize was won by Mr. A. W. Gower, The Gardens, Calcot Grange; the second by Mr. T. Butcher, The Gardens, Glebelands, Wokingham; and the third by Mr. J. Wynn, The Gardens, Hammonds, Checkendon. For three heads of Celery, the first prize went to Mr. H. Broomfield The Gardens, Clyffe House, Mapledurham, and the second to Colonel Mascall, Reading. For six Carrots, Mr. G. Clark, The Gardens, Dyson's Wood, was the winner of the first prize and Mr. J. Wynn, second. In the non-competitive section, a First Class Certificate was granted to Mr. D. Turner, The Gardens, Coley Park, for several splendid bulbs of Ailsa Craig Onions, and a similar honour went to Mr. G. Carter, The Gardens, Chazey Hill House, Mapledurham, for excellent fruits of Best of All Tomatos. Awards of Merit were granted to Mr. F. G. Rabbetts, The Gardens, Bulmershe Court, for Apples; to Mr. A. H. Fulker, The Gardens, Elmhurst, Reading, for Dahlias; and to Mr. E. Cooper, Conisborough Avenue, Caversham for Chrysanthemums and double Dahlias. The following members staged exhibits of Apples: Mr. C. J. Howlett, The Yews, Earley; Mr. A. E. Plumridge, The Gardens, Wessex Hall, Reading, and Mr. R. Haines, Calcot.

ROYAL HORTICULTURAL OF ABERDEEN.

The Annual Meeting of the members of this Society took place in Aberdeen on Saturday, November 5. In the unavoidable absence of Sir Thomas Jaffrey, the President of the Society, Mr. W. B. Clark, Superintendent of Aberdeen's Links and Public Parks, occupied the chair.

Mr. J. B. Rennett, Secretary and Treasurer, submitted the annual balance sheet, which showed a surplus of £109 11s. 3d. in favour of the Society, which was considered very gratifying. In moving the adoption of the accounts, Mr. Clark said it must be very pleasing to all connected with the Society, in view of the disastrous spring and summer experienced during 1927, to learn that their annual show had proved so highly successful. He sincerely hoped that the success was due to a greater interest taken in horticulture by the public, and that the Society would continue to prosper. Mr. Clark paid a warm tribute to the fine assistance Sir Thonas Jaffrey had rendered the Society, and declared that all connected with the Society would agree they could not find a better or more competent President than Sir Thomas Jaffrey. These sentiments were most heartily endorsed by the meeting.

The annual election of office bearers proved a mere formality, the only change made in the directorate being the election of Mr. James Mackintosh in place of Mr. John Kinnaird.

GUILDFORD AND DISTRICT CHRYSANTHEMUM.

This Society, formed in 1884, scored another distinct success at its thirty-fifth exhibition, held in the County and Borough Hall, Guildford, on November 3 and 4. There was a large attendance, so much so, indeed, that the large hall was frequently uncomfortably overcrowded.

The entries. 239 in number, exceeded those of last year by eighty-seven. Vegetables were much in evidence, and the ninety-five entries in this section contained some very fine examples. Fruits were much in evidence and of first-class quality; Apples nearly equalled the extraordinary display of two years ago, while Pears and Grapes were likewise excellent.

Amongst the outstanding successes, the President, F. F. Smallpeice, Esq., was pre-eminent. He staged twelve exhibits and was awarded seven firsts, four seconds and one third. Another notable achievement was that of Mr. F. W. Westlake (Chairman of the Committee); in the open class for the best collection of Chrysanthemums, eight feet by six feet, he won the first prize and Silver Cup presented by the late Mrs. Hamilton Fellows. Mr. Westlake is an amateur, without professional assistance. For the premier Japanese bloom the award went to Mrs. Pauling (gr. Mr. R. Street), for Red Majestic. The premier Incurved bloom was J. W. Streeter in the collection of J. J. Joicey, Esq. (gr. Mr. McKay).

The President's Challenge Cup for eighteen Japanese blooms, in twelve varieties, on boards, was won by Major Spencer Chichester (gr. Mr. H. Hall), in a keen competition with Mrs. Pauling.

The best group of Singles, grown without disbudding, came from F. F. Smallpeice, Esq. (gr. Mr. W. F. Binfield); second, L. B. Baron, Esq. (gr. Mr. G. C. Wareham). Singles, disbudded, in vases, were best shown by F. F. Smallpeice, Esq.; second, E. S. Whealler, Esq. (gr. Mr. A. Simmonds); third, J. J. Joicey, Esq.

The best collection of nine vegetables, distinct, was shown by The Rt. Hon. Lord Riddell (gr. Mr. G. Payne); second, Mr. C. Holt; third, Mr. C. W. Gadd.

For a collection of vegetables, Mrs. Farnham (gr. Mr. Binnington) led. In this collection Premier Onions and Leeks were particularly good. Mr. R. S. Green and Mr. C. Holt also won prizes, while Mrs. FARNHAM had the best dozen Onions, showing Fogwill's Guildford Champion.

In the largest class of Apples (six dessert and six cooking varieties), Mr. E. STEVENS, J. J. JOICEY, Esq., and Brig.-Gen. LONGBOURNE (gr. Mr. E. Churchill), secured prizes as named, in a good competition.

There were beautiful displays of Begonias for which F. F. SMALLPEICE, Esq., carried off the honours, with Gloire de Lorraine; second, LORD RIDDELL. Mr. F. F. SMALLPIECE was also first prize winner with Begonia Turnford Hall.

At a luncheon preceding the opening it was pleasing to hear Mr. Smallpeice generously acknowledge that for the flowers grown and exhibited in his name the credit was due entirely to "My friend, Mr. Binfield, my head gardener, who could not produce the flowers he does without a real love for them." Another indication of Mr. Binfield's enthusiasm and interest in the Society was shown by the fact that he sold over eight hundred tickets of admission before the date of opening.

The Annual Report shows the Society to be in a good position financially, with a credit balance of £104 4s. 1d. in hand.

HIGHGATE AND DISTRICT CHRYSANTHEMUM.

THE fortieth exhibition of this well-known Society was held at Highgate Hall, Highgate, on Wednesday and Thursday, November 2 and 3. Considering the lateness of the season and the early date fixed for the show, the display was highly creditable. The society is fortunate in having so excellent a President as Mr. E. W. Moss-Blundell, and Mrs. G. Saunders as Treasurer; their enthusiasm is largely responsible for the present satisfactory state of the Society.

For a group of thirty Chrysanthemums, in thirty-two-sized pots, one bloom on each plant, Mr. T. MARRIOTT, 57, Hornsey Rise, N., won first prize with well-grown dwarf plants, each carrying a good bloom of excellent form and fine quality. With an edging of foliage plants, this group was very commendable. Second prize was awarded to WATSON SCURR, Esq. (gr. Mr. J. Riches), Warltersville, Hornsey Rise.

In the class for four bush plants, W. H. MILNER (gr. Mr. S. North), Totteridge Lane, Whetstone, N., led with Mr. E. Tickle, W. Turner, Viscount Chinda and Mrs. L. Thorn; second prize was won by W. GIBBON, Esq., (gr. Mr. D. B. Arnot), Beechwood, Highgate.

For three pots of Single Chrysanthemums, Mr. S. NORTH showed well, gaining first prize with good examples of Mary Richardson, Yellow Beauty and Joan Edwards; Mr. J. HUBBARD, 92, Stanley Road, Bowes Park, second.

Excellent examples were shown in the class for six Chrysanthemum plants, one bloom on a plant, grown in a thirty-two-sized pot. A splendid exhibit secured first prize for Mr. NORTH, who showed Queen Mary, Princess Mary and Majestic in good condition. Mr. MARRIOTT was second with a good set, and third prize was awarded to Mrs. BROUSSON (gr. Mr. A. Wakeley), Fenton House, Hampstead, N.W.

There was only one entry in the class for twelve Japanese blooms, distinct. This was awarded first prize, and was from Mrs. KOHNSTAMM (gr. Mr. J. Clement), Middlebank, Hampstead, N.W. Noteworthy blooms were those of Mrs. G. Monro, Dawn of Day, R. C. Pulling, Queen Mary, Julia, Red Majestic, Mrs. A. Davis, Mrs. G. Drabble, Daily Mail, J. N. Inglis, G. C. Chapman and Majestic.

For a vase of Singles the entries made a pretty display. Leading honours went to Mr. T. MARRIOTT, who had a showy exhibit; second prize was awarded to Mr. J. HUBBARD, and third prize to Mr. A. H. CARTER, 90, Stanley Road, Bowes Park.

In the class for three vases of Large Singles, there were three exhibitors, first prize being awarded to Mr. J. CLEMENT, who had a charming set; second, Mr. A. WAKELEY; third, Mr. D. B. ARNOT.

The class for a decoration of Chrysanthemums suitable for a dinner table was well filled, and first prize was awarded to Mrs. CARTER, Bounds Green, who used Source d'Or effectively. Mr. STANLEY MARRIOTT was second, and Mrs. HUBBARD, 92, Stanley Road, Bowes Green, third.

Pretty and artistic displays were made in the class for a basket of Chrysanthemums, Mr. MARRIOTT leading with yellow and crimson flowers; Mr. J. CLEMENT second, and Mr. A. WAKELEY third.

One of the best competitions was that for sixteen Japanese Chrysanthemums, four blooms to be shown in each vase. A bold effect was made by the first prize set, which came from Mr. J. CLEMENT. Second prize was won by Mr. A. WAKELEY, and third prize by Mr. D. B. ARNOT.

Mr. J. NORTH was a splendid first prize winner in the class for a bowl of ten Japanese Chrysanthemums, his arrangement leaving nothing to be desired. Mr. J. CLEMENT also showed well and gained second prize with good blooms of Mr. R. E. Pulling; Mr. WAKELEY, third.

TRADE NOTE.

MR. W. F. GULLICK, F.R.H.S. (florist and nurseryman, of Salisbury), celebrated the coming of age of his son, Mr. Kelly Gullick, and his entry into the business, by entertaining the staff of his firm to dinner at Salisbury. Mr. Gullick presided, and among those present were Mrs. W. F. Gullick, Miss Barbara Gullick, Mr. Kelly Gullick (who has been in various parts of the country for the past four years preparing for his entry into his father's business), and two members of the staff who had been connected with the firm since its establishment, over twenty-one years ago. After dinner, Mr. W. A. Constable (Manager) proposed the toast of "Our Esteemed Employer, Mr. Gullick," and coupled with it the names of Mrs. Gullick and their son and daughter. He said they had met to commemorate the inauguration of what was now a very progressive business, to honour the coming of age of Mr Kelly, and to welcome his entry into the business. The staff sincerely and heartily congratulated Mr. Kelly on his coming of age, and wished him the best of health and prosperity. He added that wherever they went in the horticultural trade they would not find a man with a finer personality than Mr. Gullick, their employer.

Mr. C. Francis (foreman) having spoken appreciatively of Mr. Gullick, presented Mr. Kelly Gullick with a handsome, fitted, attaché case, on behalf of the staff. There were also expressions of welcome and appreciation from Mr. C. Randall (who has been with the firm for twenty-one years), Mr. G. Cole, Mr. Fay and Miss Gear.

Mr. Gullick, responding, thanked the company for their hearty reception, and said it gave him great joy to see his staff enjoying themselves. He and his wife had no desire to be looked upon as master and mistress, but wanted to be looked upon as friends, and he hoped that so long as they carried on in business their employees would look upon them as they had always done. They must try to live and work together in harmony and then they would continue to work successfully. Mrs. Gullick and Miss Gullick also thanked the speakers.

Mr. Kelly Gullick said they had done him a great honour that evening, and he thanked those present for their beautiful gift and their expressions of good will. During the last four years he had been in different parts of the country and he had had the opportunity of working among other staffs, and he had now come to enter his father's business.

Miss Goldring (Manageress of the floral department) proposed the "Business House of Gullick," and said she had been with the firm since its beginning in 1906, when they started in the Wilton Road with a little shop. Before long they wanted more land and took some at Pembroke Park and built nurseries there. In 1911, they took a shop in Salisbury, and five years later they took over the Bowling Green, which was in a very bad state, but which was now one of the best nurseries in the country. She thought they were fortunate in having such a careful and considerate employer as Mr. Gullick. Mr. Gullick, in reply, said it was the firm foundation on which the business had started that accounted for its progress, and he did not see any reason why, with continued care and attention to details, the firm should not go on progressing as it had done in the past. Horticulture, he continued, was not like a manufacturing business; it was subject to weather variations. In 1906 they made a start, and in 1907 he became associated with Mr. J. H. Blizzard and Mr. A. J. Jones, and it was that association with clever men outside his own calling that gave him tremendously broadened views, and he progressed, and was still progressing. Since 1920 there had been a tremendous increase of interest in gardening.

A programme of vocal and instrumental items concluded the proceedings.

Obituary.

William Austin.—We regret to have to record the death of Mr. William Austin, of Comely Bank Nursery, Edinburgh, which occurred with tragic suddenness on October 2, last. Mr. Austin's health had not been satisfactory for some time, but his death came as a great shock to his friends. He was fifty-four years of age, and was for many years connected with the Comely Bank Nursery, and several years ago he became a partner in the firm. His special line was alpine plants, of which he had a very comprehensive knowledge, and of which he was a skilful propagator and cultivator.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—As the result of a clerical error, the name of the author of "The Inheritance of Certain Characters in Impatiens Balsamina" (p. 349) was given as B. S. Bedell, B.Sc., whereas it should have been B. J. Bedell, B.Sc.

LAWN WEED FOR IDENTIFICATION.—*N. L.* The weed is Potentilla reptans (the Creeping Cinquefoil). The root received is several years old, and similar roots could be extracted with a forked spud. These old roots produce a large number of runners every year, but they would come away easily with the central root in May or June. At that season the foliage of the runners could be destroyed with one or two applications of lawn sand or sulphate of ammonia, because the rootstock has little reserve food. In soft ground, or where water is liable to stand in winter or for short periods in summer, this weed may become a great nuisance.

WORMS IN ROCKERY OF ALPINE HOUSE.—*H. R. D.* The presence of worms in the rockery would indicate plenty of vegetable matter and moisture in the soil, but beyond drawing leaves into their burrows occasionally they would not do so much damage, as in pots, the drainage of which they stop up. Lime-water brings worms to the surface, if a quantity of quick-lime is put into a vessel and allowed to stand for twenty-four hours, and the soil then watered with the clear liquid. An overdose cannot be given, because water will only hold sufficient lime in solution till it reaches saturation point. Lime-water should not be applied to soil containing Gentians, Silene, Achillea ageratifolia, Campanula alpestris, and other lime-haters, but otherwise it would not be harmful to rock plants generally. A powder worm-killer could be spread over the soil by hand and water then applied. This would avoid putting it on the foliage, and would seem the safer of the two wormkillers.

Communications Received.—C. E.—A. F.—G. H. C.—J. B.—W. J. P.—W. H. M.—W. P. and C.—C. S. C.—W. W.

MARKETS.

COVENT GARDEN, Tuesday, November 8th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0 15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's, per doz.—	
—pink... ...	18 0–21 0
—yellow ...	12 0–18 0
—bronze ...	15 0–18 0
—white ...	12 0–18 0
—red	15 0–18 0

	s. d. s. d.
Crotons, doz. ...	30 0–45 0
Cyrtomiums ...	10 0–25 0
Erica gracilis, 48's, per doz.	27 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety ...	12 0– 8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0 5 0
—72's, per tray of 15's ...	2 6 3 0
Solanums, 48's, per doz. ...	15 0 18 0
— 60's, per doz.	10 0–12 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0–12 0
—cuneatum, per doz. bun ...	8 0—9 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	4 0—5 0
Asparagus plumosus, per bun., long trails, 6's ...	2 0—2 6
med. sprays	1 6—2 6
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med. „ ...	1 0—1 6
short „ ...	0 6—1 9
Camellias, white, 12's, 18's, per box	2 6—3 0
Carnations, per doz. blooms .	2 6—4 6
Chrysanthemums, per doz. blooms—	
—white ...	2 0—4 6
—yellow ...	2 0—4 6
—pink	2 6—4 6
—bronze ...	1 6—2 6
—red	2 6—4 6
—single varieties	2 6—4 0
—spray, bronze, per doz. bun.	6 0–10 0
—spray, pink, per doz. bun.	8 0–12 0
—spray yellow, per doz. bun.	6 0–10 0
—spray white, per doz. bun.	8 0–15 0
Cornflower, blue, per doz. bun.	2 6—3 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	10 0–12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	4 6—5 0
—Violets, Parma, large, per bun.	2 6—3 0
—Ruscus, green, per pad ...	4 0—5 0
—Solanum fruits, per pad ...	5 0—6 0

	s. d. s. d.
Gardenias, per doz. blooms...	3 0—5 0
Heather, white, per doz. bun.	9 0–12 0
Lilac, white, per doz. sprays ...	3 6—4 0
Lilium auratum, per doz. blooms	5 0—6 0
—speciosum album, per bun.	— 4 6
—short, per doz.	4 0—4 6
—rubrum, long, per bun. ...	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per bun.	3 0—3 6
—short, doz. blooms ...	3 0—3 6
Lily-of-the-Valley, per doz. bun.	24 0–30 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle green per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas ...	21 0–30 0
Roses, per doz. blooms—	
—Columbia ...	3 0—4 0
—Richmond ...	2 0—4 0
—Madame Butterfly ...	2 0—4 6
—Golden Ophelia	2 0—3 6
—Roselandia ...	2 6—4 6
—Madame Abel Chatenay ...	2 0—3 0
—Liberty ...	3 0—4 6
—Molly Sharman Crawford ...	2 6—3 6
—Premier ...	3 0—3 6
Smilax, per doz. trails ...	2 6—3 0
Violets, per doz. bun.... ...	2 0—4 0

REMARKS.—After several days glut of Chrysanthemums the supplies are now likely to be less plentiful owing to the return of colder weather. Single varieties are now more prominent, some very fine disbudded blooms and sprays in bunches now being on sale of white, yellow, pink, bronze and crimson sorts. Carnations are somewhat firmer in price this morning, especially best quality scarlet blooms, and no doubt these and white sorts will be in more demand for Armistice Day. Arum (Richardias) Lilies are considerably more plentiful and arriving in excellent condition. At present there is an ample supply of Lilium longiflorum. L. speciosum album and L. s. rubrum are also more plentiful. Lily-of-the-Valley from home-growers has increased in quantity, and regular consignments of these blooms are also being received from Holland. Single Violets, like Chrysanthemums, have been too numerous, and prices have varied according to quality and condition on arrival here, but the return of colder weather will be more suitable for these blooms during transit. A few spikes of Nerines have been received from Guernsey in good condition.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Warner's King	4 0—6 0
—Lane's Prince Albert ...	4 0—6 0
—Bramley's Seedling ...	4 6—9 0
—Other cookers	3 0—5 0
—Cox's Orange Pippin, ½-sieve	6 0–15 0
—Blenheim Pippin, ½ sieve ...	2 6—3 6
—Ribston Pippin, ½ sieve ...	3 0—6 0
Apples, American—	
—York Imperials, per barrel ...	33 0–35 0
—King David, per case ...	14 0–16 0
—Jonathan ...	16 0–18 0
—Oregon Newtown	18 0–21 0
—Newtown Pippin	— 13 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½ barrel ...	25 0–32 6
—Ribston Pippin, per barrel ...	25 0–26 0
—Blenheim Pippin, per barrel	25 0–26 0
Bananas ...	18 0–27 6
Figs, French, per box ...	1 6—2 0
Grape Fruit—	
—Blue Goose ...	25 0–27 6
—Jamaica, case	— 18 0

	s. d. s. d.
Grapes, English	
—Alicante ...	0 10–2 6
—Colmar ...	1 0—3 0
—Muscat ...	3 0—6 0
—Canon Hall...	5 0—7 0
Lemons, Messina, boxes ...	17 0–24 0
Melons, each—	
—English and Guernsey .	1 6—5 0
Nuts—	
—Cobs ...	1 2—1 3
—Walnuts, Grenoble, per bag	4 0–11 0
—Chestnuts, Italian, bag	20 0–25 0
Oranges, per case—	
—Australian Valencia, tray	6 0—6 6
—Cape Valencia	21 0–26 0
Pears—	
—Pitmaston Duchess, trays	3 0—4 0
—Beurré Hardy, per doz. ...	2 0—3 0
—Doyenné du Comice, per doz.	2 0—6 0
Pears, Californian—	
—Beurré D'Anjou	22 0–25 0
—Beurré Hardy, per case ...	25 0–27 0
—Winter Nelis	24 0–30 0
—Doyenné du Comice, ½-case	16 0–17 0
Pines, case ...	25 0–37 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon	— 10 0
—Italian ...	— 4 0
—French ...	— 6 0
Aubergines, per doz.... ...	1 6—2 0
Beans, Madeira, per box ...	3 0—5 0
Beets	4 0—6 0
Brussels Sprouts, ½-bag... ...	3 0—4 0
Carrots, per bag	4 0—5 0
Cucumbers, doz.	10 0–12 0
—Flats, 36's, 42's	18 0–20 0
French Endive, per doz. ...	2 0—2 6
—Batavia, per doz.... ...	2 0—2 6
Guernsey Beans, per lb. ...	0 10–1 6
Leeks, per doz.	1 6—2 0
Lettuce, French, round, per doz.	1 6—2 6
—French, 5 doz. crates ...	6 6—7 6
Mint, forced, per doz. ...	4 0—6 0
Mushrooms—	
—Cups ...	3 0—3 0
—Broilers ...	2 6—3 6
—Field ...	1 0—1 6

	s. d. s. d.
Onions—	
—Dutch ...	8 6 –9 6
—Spanish ...	13 6–15 0
Parsnips, cwt. .	4 0—5 0
Peas, Guernsey, per lb.... ...	2 0—2 6
Potatos—	
—English, cwt.	5 0—8 0
—Guernsey, new, per lb. ...	0 8—1 0
—Azores, case	25 0–30 0
Tomatos, English—	
New Crop—	
—pink... ...	7 0—9 0
—pink and white	7 0—8 0
—white ...	5 0—6 0
Old crop—	
—pink... ...	2 6—4 0
—pink and white	2 6—4 0
—white ...	2 0—2 6
—blue ...	2 0—2 6
—Jersey ...	2 0—3 0
—Canary ...	12 0–18 0
Turnips, per cwt.	3 6—4 0

REMARKS.—There is room for an improvement of the conditions in most sections of the market. Imported Apples are not very plentiful, but even so, there is little or no demand. In the English Apple market the position is similar and prices generally are comparatively low. Rather heavier supplies of Apple Cox's Orange Pippin have been marketed, and although best grades of English cooking Apples are not in ample supply, there is no inclination on the part of buyers to pay good prices. Pears are on the scarce side but sell only moderately well. Choice fruits, such as Grapes and forced Melons, are meeting a slightly improved demand. The English Tomato trade is good for new crop produce, and there are fair arrivals of Canary Island Tomatos also available. Hothouse Beans, after a period of depression, are now a better trade, prices all round being firmer. Some forced Potatos from Guernsey and new Potatos from the Azores are not doing particularly well. Mushrooms remain a steady trade and prices are not showing much fluctuation. Salads, mainly from abroad are selling better. The colder weather should encourage a better enquiry for green vegetables. The Potato trade remains more or less unchanged.

GLASGOW.

Conditions in the cut flower market were depressed during the past week, when prices of Chrysanthemums declined. Supplies were heavy, especially on Friday, when the following low levels were recorded:—White and Yellow Thorpe, 1s. to 1s. 2d. for 6's; Le Pactole, 9d. to 1s.; Almirante, 8d. to 1s.; Phyllis Cooper, 1s. 3d.; Mearn's Bronze, 1s. 6d.; Exmouth Pink, 1s. 4d.; Blanche Poitou, 1s. to 1s. 3d.; Delores and Belle Mauve, 7d. to 9d.; Cranford Pink, 5d. to 8d.; Sanctity, 6d. to 8d.; Jean Pattison and Mrs. Roots, 1s. 9d. to 2s. for 12's; Pink Consul, 3s.; seconds 1s. 3d.; Bronze Consul, 2s. 6d.; seconds 1s., and No. 2 White, 1s. 9d.; White Sprays averaged 8d. per bunch. Carnations were firmer at 3s. to 3s. 6d. per dozen; pink Roses, 2s. to 4s.; red, 1s. to 2s. 6d.; white, 1s.; Lilium longiflorum, 2s. to 3s. per bunch; L. speciosum rubrum, 2s.; and Lily-of-the-Valley, 1s. to 1s. 6d.

In the fruit market, American Apples continued scarce and dear, Jonathan and McIntosh Red making 16s. to 18s. per case; Delicious, 17s. to 19s.; Canadian Spies and Russets, 40s. per barrel; Jonathan and Winesap, 35s. to 38s.; Baldwin, 30s. to 33s.; York Imperial, 26s. to 32s.; and Stark, 30s. to 32s. English-grown fruit also advanced in price. A special lot of Lane's Prince Albert realised 24s. per case. Bramley's Seedling was worth 10s.; and Lord Derby, 8s. to 8s. 6d. Doyenné du Comice Pears averaged 17s. 6d per half-case; Beurré d'Anjou, 27s. per case; Grape Fruits were cheap at 16s. per case; South African Oranges, 25s. to 26s.; Brazil, 26s. to 28s.; Sunkist, 28s. to 31s.; Pomegranates, 16s. to 17s.; Kippen Grapes, 3s. 6d. to 4s. per lb.; English Colmar, 2s. to 2s. 3d.; Almeria, 18s. 6d. to 30s. per barrel; Cranberries, 24s. per case; Melons, 2s. 6d. to 3s. 6d.; Italian Chestnuts, 36s. per bag.

The trade in vegetables was steady to quiet. French Beans sold at 8d. to 9d. per lb.; Scotch Tomatos of a good quality were worth 10d. to 1s. per lb.; Mushrooms, 2s. 6d.; French Lettuce, 1s. 9d. to 2s. per dozen; Scotch, 1s. to 1s. 9d.; English Cucumbers, 9d. to 12s.; Cauliflowers, 2s. to 5s.; Brussels Sprouts, 2s. 6d. to 3s. per stone.

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THE
Gardeners' Chronicle
No. 2134—*SATURDAY, NOVEMBER* 19, 1927.

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SUPPLEMENT PLATE.

Leptospermum laevigatum.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the past fifty years at Greenwich, 41·9.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 16, 10 a.m. Bar. 30.3. Temp. 46°. Weather, Sunny.

A Botanist in Amazon Valley.

DR. RUGGLES GATES has set a good example* to the present generation of botanists in turning his back for a time on the laboratory and adventuring a little in the wild. We could wish that his example might be followed, for botany is undoubtedly suffering from its neglect of wild Nature. Where now are the books of travel which charm and inspire the present generation like those of Darwin, Wallace and Bates charmed and inspired their own? Those works undoubtedly helped to broaden the outlook of biologists and enabled them perhaps to keep an eye on the wood whilst looking at the trees. It might, of course, be suggested that botanical exploration has been done so thoroughly that little remains to do. Yet, as the wonderful visits of Kingdon Ward and his predecessors to China and Tibet show, botanical Alexanders—if they exist—need not sigh for the lack of new worlds to conquer. As Dr. Gates records, collectors who know the Amazon Valley will asseverate that Bates and Wallace only scratched the surface so far as collecting goes. Dr. Gates' point of departure for his Amazon expedition was the Brazilian port of Para, a place regarded by Bates "as the most enjoyable on the face of the earth." Although only 1½° south of the equator, the climate of Para is equable and the average temperature not higher than 81° with extremes of 75° and 90°, so that the burghers of this selective city when not going to "the pictures" sit about and sip guaraná, a pink, non-alcoholic aperatif made by pounding up the seeds of Paullinia Cupana. Avenues of Oreodoxa regia and other Palms are numerous. The Mango, (Mangifera indica) from the east has been planted everywhere, and Ficus Benjamina, another eastern immigrant, is a favourite shade tree. From Para our explorer took ship for Manaos, a thousand miles up the river. The great Amazon, of which the Para river is a part, drains two-fifths of South America, and is navigable for ocean steamers for over 2,000 miles, and for boats of shallower draught for nearly 3,000 miles. On the journey to Manaos, the ship skirts luxuriant tropical rain forests, with Palms bordering the river, conspicuous among which are Euterpe oleracea, E. precatoria and Mauritia flexuosa. With them are larger trees, and of these giants Ceiba pentandra the Silk-Cotton tree, from which kapok is obtained, is the greatest. Climbers are to be seen everywhere, as are also clumps of the Aroid, gigantic Montrichardia, with stems six to eight feet high, and further up the river are the great "islands of floating grass," made up chiefly of species of Panicum, and afloat under the lee of the islands are great masses of Eichhornia. From Manoas, which is a hot place, Dr. Gates travelled—still by water—some 370 miles to Teffé. Among botanical objects of interest to which his attention was attracted during this part of the journey was Crescentia Cujete, the Calabash Tree, a small tree with the cauliflorous habit so common with Amazonian trees. In trees of this habit the inflorescences are not borne on young shoots, but as direct outgrowths from the old wood, and even from the main trunk. In the old days when biologists were prepared to find a ready explanation for everything, it naturally occurred to them to suggest that this habit was a device on the part of trees of dense tropical forests, enabling their flowers to meet butterflies or other pollenising insects half-way. Aloft, towering high above the ground, a flower might remain remote, unfriendly, alone—out of reach of insect life, and hence, perhaps, sterile. The "explanation" may, of course, be the consequential conclusion that natural selection arranges all that sort of thing, but such explanations, as well as natural selection itself, are just now out of fashion. Teffé, where Bates spent five years, is referred to in *The Naturalist on the River Amazon* as Ega. It was in this neighbourhood that Bates collected seven thousand species of insects, of which over five hundred were butterflies. He appears, nevertheless, to have left a good many there, for they swarmed numerously and inimically about Dr. Gates of an evening. It is, indeed, still true to say of insects—*voici l'ennemi*—for they still dispute every inch of the way that civilisation makes in tropical America. Of interesting trees in the forests are species of Couma, of which C. macrocarpa yields latex which tastes like a sweet cream. It is one of several "Cow Trees," the latex of which is drinkable. Teffé and its neighbourhood were the far limit of the voyage. On the return, Dr. Gates used his powers of observation to good effect, and as a consequence the pages recording the voyage are full of observations of interest. There is, of course, no attempt to give more than an impressionist sketch of the great tract of country which was passed through. Yet the sketch, though slender, is vivid, and should do much to awaken "wanderlust" in the stay-at-home hearts of botanists who confine their observations to their own countryside, and sometimes more narrowly to the contents of bottles with preserved specimens. If that be the effect of Dr. Gates' trip, it will have been made to good purpose.

Leptospermum laevigatum.—Our Supplementary Plate depicts flowering branches of the beautiful Leptospermum laevigatum shown by Mr. Gerald W. E. Loder, Wakehurst Place, Ardingly, Sussex, at the meeting of the Royal Horticultural Society, on August 3 last, when an Award of Merit was granted. The flowers are white and of large size for the genus. Mr. Loder writes:—"Leptospermum laevigatum was described in *The Gardeners' Chronicle* of August 6 (p. 118) as coming from New Zealand, but it is not found there, being a Tasmanian and Australian species. In Tasmania it grows to ten feet or twelve feet in height, and is an erect-growing shrub, much branched, spreading, and often drooping in habit. The flowers are white, solitary, and rather larger than those of the well-known L. scoparium from New Zealand. The leaves are also rather larger and somewhat glaucous. So far, it has proved quite hardy in Sussex, but it has not yet been tested by a really severe winter. It does not appear to be particular as to soil, but succeeds best in an open, airy situation."

Veronica Trials at Wisley.—The Council of the Royal Horticultural Society is arranging a trial of herbaceous Veronicas at Wisley during the coming season, and invites entries of three plants of each variety, which should reach the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, on or before Saturday, December 17.

Grading and Packing of Apples.—Much has been heard on this subject recently, particularly in connection with the demonstrations of proper marketing which the Ministry of Agriculture has given at various agricultural and other shows. Now, a leaflet of the Ministry (No. 98) has appeared which goes into the whole question of Apple grading, giving the various kinds of packs for use in connection with certain stated packages and the descriptions of recognised market grades for both cooking and dessert Apples. Questions of wrappings for the Apples, the proper labelling of boxes and other details in correct marketing are also discussed in the leaflet, which can be obtained on application to the Ministry of Agriculture, at 10, Whitehall Place, London, S.W.1.

Horticultural Exhibition in Berlin.—For the week from January 28 to February 5, 1928 the Berlin municipal authorities are organising what is known as a "Green Week," in which horticulture will normally play a leading rôle, and all branches of gardening will be represented; the various local horticultural and other societies combining to make the exhibition a success.

Germination of Seed Peas.—The regulations made under the Seeds Act, 1920, require, in the case of a sale of seed Peas, that the seller shall deliver to the purchaser a statement in writing containing certain specified particulars including (1) the name and address of the seller; (2) a statement that the seeds have been tested in accordance with the provisions of the Act; (3) the kind of seed; (4) the percentage of purity, if below ninety-seven per cent.; and (5) the percentage of germination, provided that, if the percentage of germination is not less than seventy per cent., a statement to that effect shall be sufficient. As was the case last year, there are indications that the germination of the 1927 crop of seed Peas is below normal, and that consequently a considerable proportion of the Peas marketed this season will be found to germinate slightly less than the minimum percentage prescribed in the Seeds Regulations. The sale of seed Peas with a germination of less than seventy per cent. is not contrary to the Regulations, provided the actual percentage of germination is declared. To avoid failures in the crop it is advisable that seeds showing on test less than a seventy per cent. germination should be sown rather more thickly than usual.

---

* *A Botanist in the Amazon Valley*, by R. Ruggles Gates. H. F. and Witherby, 326, High Holborn, W.C. Price 7/6.

Lincolnshire Potato Trials.—Some interesting results are disclosed in connection with the trials of twelve varieties of Potatos which have been carried out this year at half-a-dozen centres in the Kesteven Division of Lincolnshire. The object of the trials was to demonstrate : (1) The cropping powers of certain immune varieties, in comparison with susceptible sorts ; (2), the advantage derived from systematic cultivation and manuring ; and (3) the value of planting seed from healthy stocks. Scotch seed sets were obtained for the trials, eight varieties being supplied to each grower, who prepared and dressed the ground uniformly with the standard Potato manure supplied. The season has been a peculiar one. Whilst the intermittent rains kept the soil moist, thus supplying the plants' needs, the dull, sunless periods were conducive to blight, and it was found that some varieties, especially the late ones, such as Field-Marshal, and also Arran Chief, were much diseased. The average yield of the twelve varieties at the six centres worked out at rather more than twelve tons per acre all round, with the highest individual yield from King George (18½ tons per acre), which was secured at Freiston. This variety produced on the average 2½ lbs. per root. Field-Marshal, Catriona, Arran Chief, and Great Scot exhibited the most disease in the order named, ranging from forty per cent. to five per cent. of the tubers lifted.

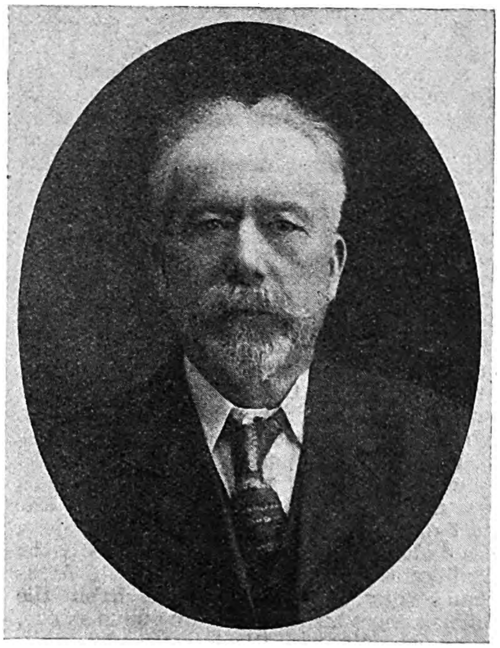
A Black (?) Carnation.—Appropriately enough, the story of the new "black Carnation" comes from Italy. It is that this horticultural wonder was raised by an Italian gardener and named Benito Mussolini. Not to be outdone, another Italian gardener has produced a snow-white Carnation which he has named Romano Mussolini, after the Duse's youngest child. The white Carnation is "a fine double blossom with a stout, firm stem, and penetrating perfume."

Harrogate Horticultural Show.—This annual event, which is held in conjunction with the Harrogate Agricultural Society's show, is fixed for Friday and Saturday, August 10 and 11, 1928. The display of plants, flowers, rock gardens, etc., made this year by some forty different leading trade firms was a revelation to all comers and the show next year is to be still more extensive and attractive. Several Cups are to be given for competition. Col. W. F. Collins, D.S.O. (who is greatly assisted by Lady Evelyn Collins), has been re-elected President for the seventh time, with Mr. George Morrell, Secretary. Mr. O. W. H. Allen is Chairman of the Horticultural section, and the Rev. J. Bernard Hall, Show Manager. H.R.H. Princess Mary Viscountess Lascelles is a patron of the Society, and it is expected she will again visit the show.

Allotments in Leipzig.—In order to encourage the allotment movement in Leipzig, a large piece of ground is being set aside in the course of the town-planning now proceeding, and will be apportioned among those who are desirous of taking small holdings. The planning of certain suburbs has already been completed and permanent allotments have been given a place in the designs. This extension of the ground intended for the purpose named has been largely the work of the local allotments and gardens association and the allotments are to be so arranged as to form part of the general scheme of open spaces for the town.

Our Diminishing Rainfall.—It seems that the world's average rainfall is becoming gradually less, for, according to the tabulated records, the rainfall has decreased about one per cent. during the last fifty years. Various reasons for this diminished rainfall have been suggested, the most recent and very plausible is that as there is often a film of oil, from ships, on the surface of the ocean this retards the evaporation of the ocean water which is the chief source of our rainfall.

Mr. G. Carpenter.—One of the best known and most successful gardeners in Surrey is Mr. G. Carpenter, who has had charge of the gardens of F. C. Stoop, Esq., at West Hall, Byfleet, since 1896. Although hale and hearty, Mr. Carpenter considers he now belongs to the old school of gardeners. After a brief schooling, he was engaged to mind sheep at a wage of 2s. 6d. per week when he was eight years of age ; he remained on the farm for about seven years and the experience gained has been extremely useful to him in later years. While acting as a farm lad he took full advantage of the facilities afforded by the local night school and, meanwhile, cultivated with great success a small flower garden attached to his home. It was this success that attracted the attention of the Rector's wife, who eventually engaged him as garden boy. He served this lady for two years and then she secured him a position in Lady Dorothy Nevill's garden at Dangstein, Sussex, at a time when when Mr. James Vair was the gardener and Dangstein was one of the show places in the south. In due course, Mr. Carpenter was employed at Petworth Park, Messrs. James Veitch and Sons' Nursery at Chelsea, and at Messrs. B. Williams and Sons' nursery at Holloway, and afterwards became foreman at Ewell Castle, but his desire for knowledge and experience led him to enter Mr. Jackson's nursery at Kingston, then a famous establishment, but now no longer existing. His next position was that of foreman at Burhill Park, Walton-on-Thames, and in 1880 he became gardener to C. J. Abbott, Esq., at Rydins, in the same district. Seven years later he took charge of Major Collis Browne's garden at Broad Oaks, Byfleet, where he remained for seven years, and afterwards spent short periods with Mr. Norman Davis, then at Camberwell, and at Linden House, Leatherhead. In 1896 he took up the position he has filled so long, honourably and successfully. Mr. Carpenter has won over two hundred prizes for Chrysanthemums, and his success at the recent exhibition of the National Chrysanthemum Society is evidence that his skill has not abated. Equal success has attended his cultivation of hardy fruits, and his awards for these include a Gold Medal from the Royal Horticultural Society, and three Silver Bunyard Medals for collections of Gooseberries. Apart, however, from his skill as a gardener and exhibitor, Mr. Carpenter occupies a prominent position among raisers of fruits and flowers, and he has to his credit such excellent Apples as George Carpenter, Victory and Comrade ; such useful Chrysanthemums as Mrs. A. Holden, General Allenby, Golden Marvel, G. Carpenter, E. Reeves, Sunshine, White Model, Laddie and Mrs. J. Palmer ; and Carnations Master Michael Stoop, Freddie Ward and Hercules. The whole of the glass-houses at West Hall have been erected under the supervision of Mr. Carpenter, who has also practically remodelled the whole of the gardens under his control, and not very long ago he planted an orchard of seven-hundred bush fruit trees for the purpose of demonstrating the best varieties to grow in the district. In Mr. and Mrs. Stoop, Mr. Carpenter has sympathetic and keenly interested employers who give him every encouragement to continue his excellent work at West Hall. Local horticultural societies have received great assistance from Mr. Carpenter, who has freely given his services as a lecturer, and has always been ready to give sound practical advice. On several occasions he has lectured to the students at Wisley, and it is one of his deep regrets that owing to doctor's orders he has now had to give up lecturing during winter evenings.



MR. G. CARPENTER.

Iris Society.—The fifth annual general meeting of this Society will be held at the Grosvenor Hotel, Victoria, S.W.1, on Wednesday, November 30. The meeting will be preceded by the usual dinner, at 7.15 p.m. (morning dress), 10s. 6d. per head, payable at the table, and those who do not wish to attend the dinner should note that the business of the meeting will commence about 8.30 p.m.

Association of Economic Biologists.—The December meeting of this Association will be held on the 16th inst., at 2.30 p.m., at the Imperial College, South Kensington, when Mr. W. E. Hiley, Mr. R. N. Aldrich-Blake and Mr. L. Chalk will open a discussion on "The Influence of Climate on the Rate of Tree Growth."

Cauliflower Cultivation in Erfurt.—On October 29, the one thousandth railway truck full of Cauliflowers was laden and driven from the goods station, and the occasion was celebrated by a little festival arranged by the local Cauliflower Growers' Association. A gathering of local notabilities, including municipal authorities, station officials, members of the Growers' Association, etc., took place at the station, the waggon of Cauliflowers was decorated with flowers, and speeches were made, in which the enormous development of the Cauliflower industry in the Erfurt district was traced.

British Mycological Society.—The following programme has been arranged for the meeting to be held at University College, Gower Street, W.C.1, to-day, Saturday, November 19, at 11 a.m. Mr. S. F. Ashby, "The Oospores of Phytophthora nicotianae, with notes on the taxonomy of P. parasitica" ; Mr. B. F. Barnes, "On the Production of Variations in Eurotium" Mr. S. Garside, "Method of Reproduction in Siphula tabularis" ; Mr. R. N. Nattrass, "The Physalospora disease of Basket Willow" ; Mr. J. Ramsbottom, (i) "Mycological nomenclature" ; (ii) "Editorial Comments."

Societies and Income Tax.—A law-suit, of special interest to the management of horticultural societies, has just been concluded. The Commissioners of Inland Revenue claimed Income Tax from the Yorkshire Agricultural Society in respect of £350 derived from investments, on the grounds that the Society was not a charitable organisation within the meaning of Section 37, Sub-section 1 (B) of the Income Tax, 1918, Act. On appeal, the Commissioners for the Special Purposes of Income Tax held that the Society was a charity, but this decision was reversed on a second appeal, by Mr. Justice Rowlatt. At the end of last week the Master of the Rolls, Lords Justices Atken and Lawrence, at the Court of Appeal, decided that the Society was a charity within the meaning of the Act, and therefore was exempt from tax. The Yorkshire Agricultural Society was formed in 1837 for the general promotion of agriculture, by, amongst other means, the holding of an annual show. In 1923 the scope of the Society was enlarged and it was decided to pay attention to legislation and to advise its members on matters affecting the agricultural industry generally. Various arguments were advanced during the appeal, which occupied several days. The chief grounds on which the Solicitor-General (Sir Thomas Inskip, K.C.), on behalf of the Crown, contended that the Society was liable to Income Tax were that, within the meaning of the Act, the Society was not "established" at all, as there was no trust deed or element of permanency as should be the case in a Society established for charitable purposes only, and that the Society gave its members certain privileges, such as the use of dining-rooms at the shows, special rights of admission and railway facilities, free analysis of manures and fertilisers, and admission to auxiliary shows. In giving judgment, the Master of the Rolls pointed out that in the case of the Royal Agricultural Society it had been determined that, although an institution might be a charity, if it carried on a trade, such as a show, for profit, it would be liable to pay Income Tax on that profit. But if such profits were applied solely to the charitable purposes of the Society they should be exempt from tax. He held that the Yorkshire Agricultural Society was established for charitable purposes only, and that the receipts from investments, if applied for charitable purposes only, were exempt from tax. In this the Lords Justices concurred.

Laelio-Cattleya Sunbelle var. Sunset.—Under the illustration on p. 383, we stated that Mr. Hanbury's fine new Orchid received an Award of Merit, whereas it was unanimously voted a First Class Certificate, as stated on p. 372, in our issue of November 12, where the plant was fully described.

Scottish Seed Potatos.—The National Farmers' Union of Scotland reports that trade in Scottish seed Potatos to England is slow, but three varieties in the third-year's test for registration are commanding big prices, especially Arran Banner, the Gold Medal winner at Ormskirk, which is worth £500 per ton, £300 per half-ton, £50 per hundredweight, and £8 per stone. The quantity of Doon Star offered for sale is valued at £50 to £60 per ton, in ton or two-ton lots; £25 per quarter-ton lots, and £6 to £10 per hundredweight. Harold is meeting with a good demand at the following rates, according to dressing:—£30 to £35 per ton, and £2 to £2 10s. per hundredweight.

Bermuda Lilies.—Last year the Bermuda Trade Development Board made an offer on behalf of the Bermuda Department of Agriculture, of one dozen Bermuda Lily bulbs to be awarded as a prize in any competition at annual shows. The Board, under the instruction of the Bermuda Department of Agriculture, is making a similar offer in connection with horticultural exhibitions during 1928. The only stipulation is that societies accepting the prize should give a half-page space free in their schedule for an advertisement of the Bermuda bulbs and that a note should appear in the schedule that the bulbs are given by the Bermuda Department of Agriculture.

Legacy to a Gardener.—The late Commander John Arthur Colwell, of Burleigh, Grosvenor Road, Bournemouth, who died on October 18, bequeathed £500 to his gardener, Mr. Bartlett, if still in his service.

Appointments for the Ensuing Week.—Monday, November 21: Birmingham Gardeners' Mutual Improvement Association's lecture; East Anglian Institute of Agriculture's lecture. Wednesday, November 23: Wimbledon Gardeners' Society's meeting. Thursday November 24: Paisley Florists' Society's meeting; London Gardens Guild lecture. Friday, November 25: Manchester and North of England Orchid Society's meeting. Saturday, November 26: Burnley Horticultural Society's show; Harrogate Horticultural Association's show; Lancaster Horticultural Association's lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cuthill's Plan of Growing Potatos.*—Amongst all the various methods that have been tried for the improvement of Potato growing, none appear so practicable, and at the same time so efficacious and inexpensive as that given to the public by Mr. Cuthill, of Camberwell. Newspapers and journals, both English and foreign, have for years past contained antidotes and systems of cultivation without end; some, doubtless, have answered in certain districts, as is proved by the evidence of the parties adopting such plans; but that they are not based on sound principles seems evident, because, how frequently do we next season read of some great failure of a crop grown on the same system. It is difficult to call to mind all of even the most feasible propositions that have been published; but having been a close observer of them, from a great anxiety I have always had to obtain the best information on the subject, I can remember none that go so thoroughly into the matter as Mr. Cuthill. The basis of his success is proper treatment and preservation of the seed; and it is due to him to say that since I have adopted his plan of thoroughly ripening the roots required for that purpose, I have had not only a very considerable falling off in the quantity of diseased tubers, but the yield has also been much greater. My plan of "greening" the sets is to allow them to remain on the land for some days after the large Potatos have been picked off. Instead, then, of storing them in pits, I spread them thinly on a barn floor, or any other cool, dry, airy place on the premises, taking an opportunity now and then of turning the lot over, so that they all come in for a share of air and light, by which means they are not forced by their own heat into making weak shoots, which are broken off when the seed (sets) is taken from the pit. I have no interest in writing on this subject beyond the desire of supporting a system that appears to answer. This year the Potatos almost immediately adjoining my land are scarcely worth raising, and of bad quality; out of 500 sacks, I have but 39 diseased, and 86 small tubers for seed; the rest are fine and mealy, and have been sold at 95s. per ton in Covent Garden. In my own garden I had six varieties of Potatos; our early Kidneys from my own "greened seed" were sound, five other new varieties bought this season in London were nearly all diseased, fully three-fourths, both in my own garden and also in the garden of a gentleman some miles from here, to whom I gave a portion of each lot. Should anyone doubt the utility of the above plan, I should strongly advise them to try it on a small scale; and wish them the same success that has hitherto attended the adoption of it with me. *E. Compton, Water Newton, Wansford. Gard. Chron., November 20, 1852.*

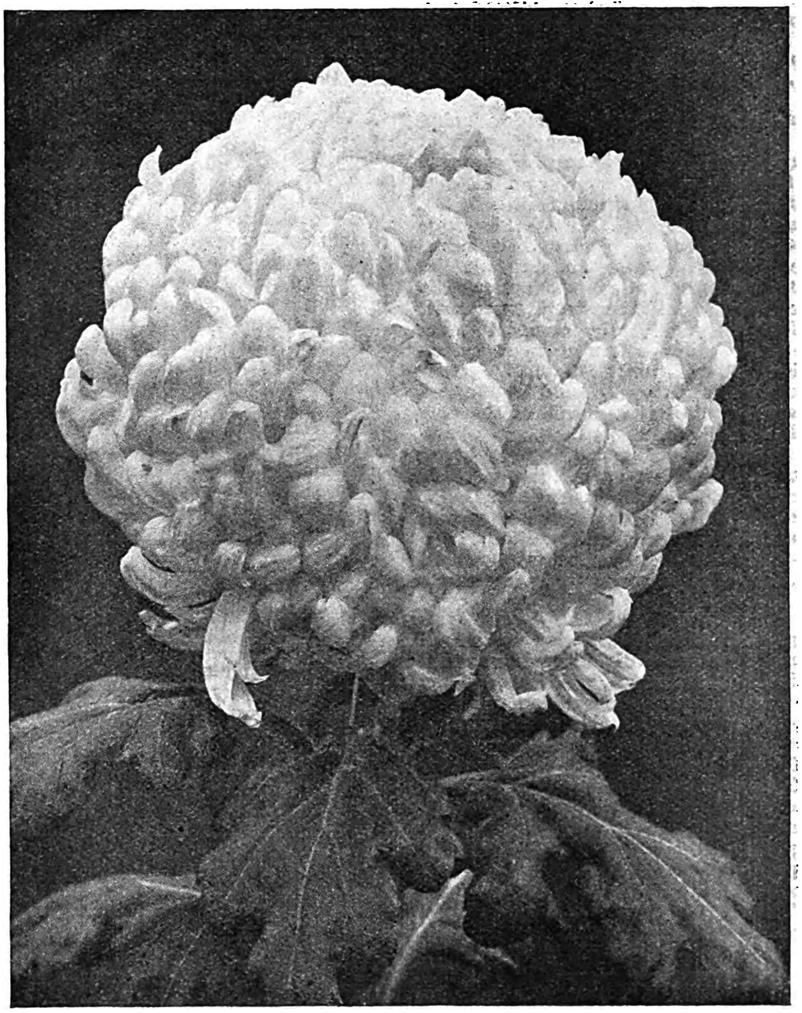


FIG. 180.—CHRYSANTHEMUM MONUMENT.

N.C.S. First-Class Certificate, November 8. Flowers milk-white. Shown by Messrs. Keith Luxford and Co. (see p. 393).

Publications Received.—*Catalogus Insectorum Jamaicensis*, by C. C. Gowdey; Entomological Bulletin, No. 4, Part 1 and 2; Department of Agriculture, Jamaica; price 2/-.—*The Ley Hunter's Manual*, by Alfred Watkins; Simpkin, Marshall and Co, London, E.C.; price 2/2, post free.—*Roumania and Her Rulers*, by Mrs. Philip Martineau; Stanley Paul and Co., 8, Endsleigh Gardens, W.C.1; price 10/6 net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Species and Hybrids.—The older order of things is gradually passing away in our Orchid houses; fewer plants are being imported, and more and more are being raised from seeds, and as the years pass a greater brilliance of floral colour appears. Occasionally, one is told that Orchids, especially hybrids, have seen their day, and presently everybody will be falling back on the old species again. Fashions in flowers always did exist and always will, but to the lover of the beautiful, as well as of the curious, Orchid flowers will always make a strong appeal.

Zygopetalum.—Flower spikes are developing from the partially-developed pseudo-bulbs of Zygopetalum Mackayi, and from now onwards until the flowering season is over extra care must be taken in the application of water to the roots, as an excess of moisture at this stage may cause the spikes to turn black and the leaves to become spotted. Water should only be afforded at this season when the compost is dry, and sufficient should then be given to soak the materials thoroughly, the compost being allowed to become dry before again repeating the operation. Z. crinitum, Z. Clayi, Z. Perrenoudii, and others of this type, should be afforded similar treatment until the growth of the new pseudo-bulbs is fully completed. These plants thrive well in a moist, shady position in a house having an intermediate temperature. The dwarfer-growing kinds, which include Z. Ballii, Z. rostratum and Z. Roeblingianum, should also be afforded a similar position. The Sphagnum-moss on the surface material should, if possible, be kept alive by being frequently sprayed.

Repotting.—Plants of the Bollea section of Zygopetalum, together with Chrondrorhyncha Chestertonii and C. fimbriata, with other plants of a similar nature that are sending out new roots, may be repotted at this season. Pots or pans are suitable receptacles and a rooting-medium of Osmunda-fibre and Sphagnum-moss cut into short portions, thoroughly pulled to pieces, and mixed well together, is suitable. Zygopetalum Gautieri and Z. maxillare, being of a rambling nature, are not suitable for growing in pots or pans, and should be fixed to a portion of the stem of a Tree-Fern or other open material. The roots of these two species should be kept moist at all seasons.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Peas.—Make a sowing in a sunny frame, where gentle warmth may be given when necessary, to provide a supply towards the end of next April and early May. Seeds may also be sown in eight-inch pots and the seedlings brought on steadily for the same purpose. The soil should consist of three parts good loam, with leaf-mould, old Mushroom-bed manure and sufficient gritty matter to keep the whole porous. Good varieties of Peas for this purpose are Carter's First Crop, Sutton's Harbinger, and Little Marvel.

Protecting Material.—Owing to the long spell of mild and moist weather, vegetation has developed very soft growth, especially where crops have been planted in loose or very rich soil. It is advisable, therefore, that a good stock of Bracken or other protecting material should be kept dry and ready for use. All decayed leaves should be removed from such crops as Brussels Sprouts and other Brassicas.

Globe Artichokes.—The stems of these vegetables should be cut down and some well-rotted manure dug in between the rows. Should frost become severe, either a mound of ashes or littery manure should be placed around the crowns. Where new plantations have to be made next spring, a good stock of healthy suckers should be potted in six-inch pots, using good fibrous loam, and a little old hot-bed manure, with sufficient gritty substance to keep the whole porous. The pots should then be plunged in ashes, in a cold frame, whence frost can be excluded. Plenty of ventilation should be afforded in open weather. Very little water will be required until the roots have made considerable progress. In the meanwhile the site for the new plantation should be well trenched and heavily manured, leaving the soil very rough on the surface until the planting season arrives next April.

Cucumbers.—Careful ventilation is necessary and should be afforded only when weather conditions are suitable, and then for a short time during the forenoon, after which the lights should be closed down so as to conserve all the solar warmth possible. Spray the foliage lightly on bright days, and keep the atmosphere humid. The cultivator need not be anxious to maintain a high night temperature, as one about 65° will prove satisfactory, and even slightly lower while frost is severe. Mats should be used for protection during the night, when cold winds prevail. Keep the growths trained evenly and thinly, allowing every leaf ample space to develop. Keep a quantity of good fibrous loam mixed with good Oak or Beech leaves, bone-meal and lime-rubble for top-dressing the soil so soon as the Cucumber roots show through. Small top-dressings frequently given will greatly assist the plants. Vaporise the house or pit with a nicotine compound immediately thrips appear. Do not overcrop at this season, or the supply of young fruits will quickly cease.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Lilium longiflorum.—Bulbs of this Lily should be potted directly they are received from the dealer, and kept in a cool frame until root action is vigorous. The flowering period is determined by the treatment afforded; they may be grown under quite cool conditions, but by a little forethought and arrangement the flowering period may be spread over several months. So soon as the roots are active a batch of bulbs may be gradually inured to heat and brought into flower, while others may be treated likewise at intervals of three weeks or so.

Freesias.—Plants of the earliest batch of Freesias are now growing freely and require staking. Unless the flowers are required early, it is not advisable to hasten them by excessive forcing. To have them at their best Freesias should be grown under cool conditions at all times.

Cyclamens.—These are now producing flowers in quantity and should be kept growing actively by frequently feeding the roots with soot-water and some reliable fertiliser. When applying water it is a mistake to pour the water into the centre of the plant as this causes the flower buds to rot. Remove decaying leaves and spent flowers. The latter should at all times be pulled out and not cut, as the cut end of the flower stalk will decay and prove a source of danger to buds. Cyclamen flowers should always be pulled and not cut, but before placing them in water cut off the hard end and split the flower stem. Young plants raised from seeds sown in August should be large enough to be pricked off into pans or boxes. These latter should be clean and well-drained. A suitable compost consists of loam and leaf-mould in equal parts with the addition of bricks broken into a powder, and silver sand. Pass the whole through a half-inch sieve, rubbing through as much of the fibre of the loam as possible. Prick out the seedlings about one-and-a-half-inch or two inches apart each way, and grow them on a shelf near the roof-glass in a temperature ranging from 55° to 60°.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Raspberries.—If new Raspberry plantations are to be made and the land has been well prepared, planting should proceed at once. Although Raspberries will succeed on the same site for many years, the time comes when they are not worth the room they occupy. There are different methods of planting. I prefer to set them out in lines six feet apart, the canes being planted one foot apart in the rows. The roots of the Raspberry do not penetrate far, so that the young canes should not be planted too deeply. Heavy, stubborn soils may be greatly improved and made to produce strong, firm canes and heavy crops of large berries annually by trenching, breaking up the subsoil, and adding leaf-mould, old potting soil, decayed material from the rubbish heap, burnt earth, and any other suitable light material, all being thoroughly mixed together as trenching proceeds. Early planting results in a much better and stronger growth than late planting. Dependable varieties include Lloyd George, Superlative, Abundance, Baumforth Seedling, and Norwich Wonder. In these gardens, the old Northumberland Filbasket usually yields heavy crops. When planting young, well-rooted canes, tread the soil moderately firmly about the roots, and let the tops remain to be cut down to the ground level when new growth starts in spring.

Currants.—Push forward the pruning of Currant bushes now that they have shed their leaves. Cut back all the side-shoots along the cordon-shaped branches, also the leaders, provided the bushes have attained a suitable size, but young trees should be allowed to extend their growths until they have reached a suitable height. The pruner should always keep his eye on the most suitable shoots for building up a shapely and profitable head. Overcrowding should be prevented, otherwise much of the fruits will be spoiled when ripe. After pruning the bushes and removing the prunings to the fire heap, dress the land with decayed manure. Fork the land over and string lines of black cotton over and above the bushes as a prevention against sparrows and other destructive birds.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Early Peaches.—If ripe Peaches from trained trees are wanted in May, no time should be lost in closing the house, as it is better to start early at a low temperature, with plenty of air, then to force hard against time when the fruits are approaching ripeness. If previous directions have been followed all will be ready for starting the trees. The inside borders should be carefully examined and well-watered with tepid water if the compost is at all dry. For sometime after the house is closed it will not be necessary to apply fire-heat, especially if fermenting material is used, as this will help to create a moist atmosphere that is a great help to the buds. An impression prevails that ventilation throughout the early stages of forcing is of trifling importance, but this is a mistake, as trees that are started while a free circulation of fresh air is allowed, expand stronger and more perfect flowers than others which do not receive this attention. On fine, bright days the top as well as the bottom ventilators may be opened, and when the buds become prominent, gentle fire-heat will favour the admission of more air, while a gentle dewing over with the syringe once or twice in the course of the best part of the day will be of great assistance. A temperature of 40° to 45° is high enough to start with, then, as the buds swell, 45° may be given as the minimum and 55° as the maximum, with a rise to 60° with sun heat in the middle of the day.

Pot Vines.—If pot vines were thoroughly ripe and in a satisfactory condition for starting, the earliest batch will now be swelling up their buds. If irregular, or the buds at the points are in advance of those near the base, the rods may be bent down over the fermenting material until the faulty part becomes the highest point, when constant moistening will soon assist development. When all the buds are well on the move tie the rods to the wires, but defer the removal of superfluous shoots until those carrying the best bunches are quite perceptible. Later on stop the growths at the first or second leaf beyond the bunch, according to space, tie them down carefully and discontinue direct syringing. Raise the temperature to 60° at night and 70° on fine days. Cover the house at night where this is possible. Pay careful attention to watering, as many pot vines are ruined by an excess of water before the buds have fully expanded, but once these are well on the move and young leaves begin to expand, this danger is considerably lessened. Damp the walls and surface of the bed two or three times a day, according to the outside conditions; keep the evaporating pans filled, but defer the use of stimulants until the berries have set and are swelling. Where free-setting varieties show duplicate bunches, remove the weakest, leaving only one on each shoot, and cross fertilise when they are in flower. Madresfield Court, one of our best Grapes for pot culture, does not set quite so freely as Black Hamburgh, but if intermixed with others and all the bunches are dusted with the same brush, fertilisation will be certain.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Rock Garden.—At this season, constant attention is necessary to prevent injury to small-growing alpine plants from falling leaves. If any rebuilding is to be done, now is a suitable time for the work, choosing, if possible, a period of dry weather. Even if no reconstruction work is necessary, pockets of soil will need fresh compost. When doing work of this sort it is important to remember that many rock-garden plants have a root system out of all proportion to their top growth, therefore it is necessary to afford them a deep root-run. A depth of three feet is not too much for many kinds. The root-runs should consist largely of rubble and small stones mixed with a little soil; indeed, alpines may be depended upon to succeed better in such a root-run than in one composed entirely of good loam. Another advantage of such a compost is the fact that during spells of dry weather the stones help to conserve soil moisture. Many rock-garden plants benefit by an annual top-dressing of fine, gritty compost; this applies generally to plants with a flat, spreading growth, from which they emit new roots into the fresh compost. Subjects liable to suffer from damp should be protected by a sheet of glass.

Lawns.—The levelling and returfing of lawns should be undertaken when weather conditions are suitable. Worn portions of tennis courts, if not already attended to, should be returfed so soon as possible, thus allowing the turf plenty of time to become established. The same remarks apply to cricket pitches and bowling greens. Where greens are inclined to be soft and spongy on the surface, they may be greatly improved by a good dressing of sand applied now. Although sea sand is best for this purpose, any good, clean sand will answer. Free drainage is essential for all playing grounds. Wherever necessary, the edges of paths and drives should be relevelled and straightened as well-kept paths and trim edgings add greatly to the appearance of a garden.

Helleborus niger and its varieties.—Where slugs are troublesome, means should be taken to prevent them injuring the flowers of Christmas Roses; decaying leaves should be cleared from the plants and a layer of ashes placed around; sprinkling with Tobacco dust also helps to keep the pests at bay. Where Christmas Roses are required for cutting, they must be protected by means of handlights or frames. Plants may also be lifted and placed in frames, but where this is done reserve stocks should be grown, as this Hellebore will not withstand lifting every year.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Frames.—Cuttings of various plants inserted in cold frames several weeks ago, are now looking well, and air should be admitted by raising the top ends of the sashes a few inches on all favourable occasions. The soil between the rows of cuttings should also be stirred occasionally to keep down moss and weeds. Afford water only when the plants appear likely to suffer for want of it, and that, as a general rule, is very seldom during the winter months. Violets which were planted in frames in September are now providing a few flowers, which should be picked regularly; remove decaying leaves, especially from the crowns of the plants, where they have a tendency to smother the flower buds. As severe frosts may be expected, mats should be kept handy in a dry place for covering the frames, but as nothing is gained by coddling the plants, the mats should be removed immediately the danger is past, and dried before being used again, as a dry mat will prove much more effective in keeping out frost than a wet one.

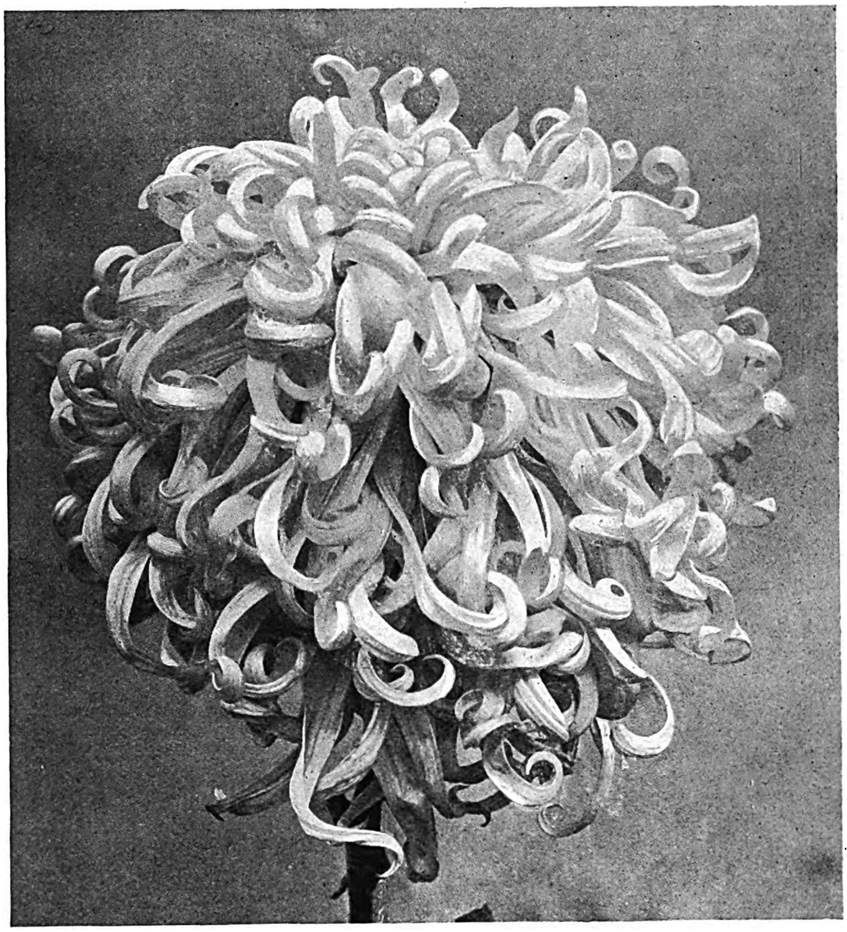


FIG. 181.—CHRYSANTHEMUM SOUTHAMPTON.
N.C.S. First-Class Certificate, November 1. Flowers bright yellow. Shown by Mr. H. Woolman. (see p. 393).

Bulbs.—Examine the earliest potted bulbs in the plunge bed and remove to a cold frame or cool house any that are showing a fair top-growth; here they may remain for a few days before being moved to warmer quarters. Bulbs growing in bowls of fibre in a dark room should also be examined from time to time, as they are liable to suffer from lack of water or the visitations of mice; these vermin have an uncanny knack of discovering such bulbs as Tulips and Crocus, and in one night may do irreparable damage. Before introducing bulbs to heat it is advisable to ascertain whether the roots have made corresponding progress to the top-growth, as one of the most important factors in bulb-forcing is to have the plants well established in their pots or boxes before forcing commences.

Herbaceous Borders.—With the exception of a few belated flowers, the herbaceous borders are now shorn of their beauty, and a general clean up is necessary, although the method of cutting everything down to the ground level is not a good one. Many plants that are not considered quite hardy will survive in the open border if protected by their own decaying foliage, and the intermingling browns and greys keep the borders in a more or less furnished condition during the winter. Where borders contain members of the Erica family these help greatly to bridge over the dull period. Varieties of Erica vagans and E. stricta have still some remnants of their autumn displays, and the many forms of E. carnea are already bristling with buds, which in many districts are usually showing colour before the end of the year. Morina longifolia is still showing its pinky-white whorls, and that wonderful Lupin, Sunshine, has never been out of flower since its first glorious display of yellow in June. Kniphofia grandiflora has extended the flowering season of this splendid family, its orange-scarlet torches being most conspicuous when other varieties have faded. A few of the later Asters, notably of the Novi-Belgii type are still presentable.

ALPINE GARDEN.

MESEMBRYANTHEMUM UNCINATUM.

Many flower-lovers in any but the mildest parts of the British Isles must envy their fellows in the south who can grow Mesembryanthemums, and who can enjoy outdoors their brilliant flowers and their distinct foliage. It is a revelation to visit a southern garden where these Noon Flowers are well represented, and many of us must breathe a sigh of regret at our inability to retain these charming flowers except under the shelter of glass. The species which appears to be the hardiest and the only one which affords any prospect of success in gardens with a moderate, as contrasted with a mild, climate, is that named M. uncinatum, which, apart from its chances of producing flowers, is a most distinct-looking plant for a rock garden. It is a shrubby species, forming many branchlets, sharp-pointed and almost spiny, and of a grey-green colour. It is, unfortunately, a shy bloomer in the north, but when it produces its pink flowers it is much appreciated, although even if it never flowered it is of value as a plant of distinctness and considerable attraction. It grows about nine inches high. It should always have the hottest, driest and sunniest position possible, in light soil, but even in a climate not too dry in winter it does not appear to suffer. M. uncinatum may be increased by cuttings. It should not be confused with another species called M. uncatum, which is not so hardy.

ROSMARINUS OFFICINALIS VAR. PROSTRATUS.

The Rosemary, with its legendary and other lore, has long been a favourite in British gardens, and the introduction of the prostrate form from Corsica, called R. o. prostratus, was welcomed with delight by many lovers of rock plants. Its appearance was enough to justify the eagerness with which alpinists desired to possess it. Its small, delightful foliage, its gracefully pendent habit, and its pale blue flowers—which looked so exquisite on their carpet of greenery—were all sufficient as a passport to its introduction to many, many gardens. But—and it is a pity that a " but " should occur in connection with one's merited words of praise for such a charming plant—it has not proved hardy enough for many northern gardeners, and even for some in more favoured districts, therefore, those who wish to retain it would do well to keep a few cuttings in a frame during winter, to replace plants which may succumb during severe weather It is just possible, although I have not tried it, that plants protected by a sheet of glass might survive, but a trailing plant such as this is not such a good subject to protect in that way as one on the level. Yet this prostrate Rosemary is so beautiful that some special care should be taken to retain it. *S. Arnott.*

ESCALLONIA RUBRA PYGMAE.

This is a very charming little rock garden shrub. It is an evergreen, the habit is dense and compact, and it bears throughout the summer and autumn an unfailing crop of little Fuchsia-like flowers of a bright crimson. E. r. pygmae appears to have been discovered as a " Witch's Broom " growth on a bush of the species in Ireland. But, notwithstanding this, it does not show much tendency to revert. Occasionally it may put forth a long, vigorous shoot, but such behaviour is easily kept in check. E. r. pygmae seems to be quite hardy, as one might have expected, since E. rubra is quite one of the hardiest species of its genus. Propagation must, of course, be carried out by means of cuttings, and in this there is no difficulty. Like other Escallonias, this dwarf variety enjoys a light, free soil and full sun.

HELIANTHEMUM ALYSSOIDES.

In many respects this is the best of the Sun Roses with yellow flowers. I make that claim for it because, with me, at any rate, it has a longer flowering period than any other, practically continuing to bloom without cessation the season through. Then it is of a more compact and less straggly habit than its nearer allies. Making a dense cushion, not often more than a foot in height, but possibly three feet wide, it maintains that neat and orderly shape for years, never needing any cutting back beyond the removal of the spent flower spikes in early spring. The leafage is pale green and downy, and the saucer-shaped flowers, over an inch across, are a particularly pleasing, warm, golden-yellow. Though a native of Spain and Portugal, H. alyssoides is quite hardy in any poor, stony soil, and it is, as I have suggested, a plant that will carry-on for many years without showing any signs of deterioration. *A. T. J.*

BULB GARDEN.

NARCISSUS CANALICULATUS.

This miniature Tazetta Narcissus from Mentone is delightful when placed in sunny pockets in the rock garden, in well-drained, sandy loam; the narrow, erect, bluish-green foliage is an excellent foil for the scapes, each bearing three or four flowers with a white, reflexing perianth and globular, golden cup. The flowers are fragrant and delightfully pretty, the whole plant being about six or seven inches in height.

Last spring I was impressed by the beauty of a small colony of this little Narcissus, growing in a rock garden. Another beautiful little species characterised by wonderfully rich colouring, is N. juncifolius, from the Pyrenees; the rich, golden-yellow flowers are little larger than those of the Buttercup, the tiny crown quite flat, and the height of the plant some three or four inches. The leaves are Rush-like and cylindrical and the small, ovoid bulb is not more than half-an-inch thick; the flowers are faintly but pleasantly fragrant.

These miniature Narcissi are delightful when grown in pans in the alpine house or cold greenhouse. *Ralph E. Arnold.*

HARDY FLOWER BORDER.

ACHILLEA GOLD PLATE.

I was glad to observe Sir Herbert Maxwell's favourable comment upon Achillea Gold (or Golden) Plate, in your issue of October 8, p. 290. It first came under my observation last year, when I saw it in the nursery of the Glasgow Parks Department, at Bellahouston Park. At that time, Mr. William Robertson, now Parks Superintendent at Llandudno, drew my attention to it, and spoke highly of it. I had previously seen cut flowers of A. Gold Plate in a large vase and was very pleased with the blooms and the effect they produced. I have grown A. Gold Plate in my own garden this year, and, although planted late, after one or two temporary shifts, owing to its place not being ready in my new garden when it arrived, it has been very fine. It is the best of the tall, flat-flowered, yellow Achilleas, and, compared with that named Parker's variety, shows its superiority at a glance. *S.*

ANEMONES.

On most soils which are moderately well-drained Anemones may be raised from seeds. If a sunny, sheltered situation is chosen for the seed-bed and the seeds are sown in March, the resulting plants will begin to bloom in the autumn and continue to flower for some months. By making successional sowings, blooms may be obtained throughout most of the year. The seed bed should be prepared by removing the top spit, adding a four-inch layer of well-decayed cow manure, and returning three inches of the top soil, finely sifted. Heavy soils will require the addition of sand. The surface of the bed should be firm and even. As the seeds are woolly it is a good plan to rub them with sand, and sow thinly in drills drawn six inches apart. Lightly cover the seeds with very fine, sandy soil. Germination is very slow. The beds must be watered during the absence of rain and mats or other coverings may be placed over them to keep the surface moist. Remove all weeds and thin the seedlings to six inches apart; thinnings may be transplanted if carefully handled.

There are numerous strains of these beautiful flowers, but Anemone coronaria (Poppy Anemone), A. St. Brigid and A. fulgens have proved satisfactory.

Roots of these Anemones may be planted from October to April. In very cold or damp districts planting should be deferred until January and the beds covered with long litter, Heather or Bracken, until danger from severe frost is past. Plant the roots from four to six inches apart and three inches deep, choosing a dry day when the soil is in a good working condition.

The Poppy Anemones should be lifted each year after the foliage has died down; their flowers are greatly prized for cutting, and by planting at intervals from October to December a succession of blooms is obtained during the early spring, when they are most useful. The St. Bavo Anemone has been raised from the favourite A. fulgens; when planted in the autumn flowers are produced during March and April; the colours are scarlet, rose, salmon, blush and carmine; many have a white centre. They are free-flowering Anemones of graceful habit, and their height is about nine inches.

A beautiful variety for a sheltered situation is the dainty double Rose de Nice, of delicate pale rose colour. The Peacock Anemone should be planted in a warm, sheltered situation.

Anemone fulgens is very hardy, but it likes a well-drained, rich soil, and a sunny aspect. When planted early in the autumn it will flower during the winter. It is very suitable for the wild garden, woods and banks. There is a large-flowered variety with extra petals and brilliant scarlet flowers on long stems; this lasts well when cut. *C. Ruse.*

PULMONARIAS.

Save for the fact that they appear at a season when flowers are few, the majority of the Pulmonarias are not particularly attractive. But there are two good sorts, and both have unspotted leaves. These are P. azurea Munstead variety, and P. rubra, presumably a species. The former, though it has not altogether lost the pucy tint as the flowers fade, is a richer, purer blue than any other known to me, and the blooms are considerably larger than those of Lungworts in general. P. rubra is a robust and vigorous grower whose pale green leaves during summer are as large as those of a Dock. But before these have commenced to grow, the flowers have the field to themselves, and they are produced on stout, branching stems up to a foot in height. In colour, they are quite unlike those of other Pulmonarias, being a bright cinnamon-red of an unusual and pleasing shade. There is not the remotest trace of blue in these from start to finish. Both of these are admirable plants for the woodland, mixed border or shrubbery, and they are indifferent as to soil or situation. *J.*

WOODLAND GARDEN.

SCHIZOCODON SOLDANELLOIDES.

There are few choicer woodland plants than this, and it is refined and beautiful enough to associate with the rarest of Shortias, Chimaphilas and other treasures of the kind. S. soldanelloides comes from Japan, and it is not really difficult if one has the right conditions and a decently healthy root to start with. With me it does very well in a light, well-drained but cool soil generously mixed with really old, black leaf-mould from Oak and Pine woods, and containing some buried stones. Thin shade from the hottest sun is desirable, and there should be no lack of moisture in spring and early summer.

In common with the Shortias, I believe this plant appreciates a certain amount of acidity in the soil. Given such treatment, S. soldanelloides should grow into a low mat of rounded, leathery, dark-green leaves, which are glossy and slightly toothed. In spring the flowering stems rise to about six inches and bear several nodding blossoms, bell-shaped and beautifully fringed, like those of a Soldanella, and of a most exquisite rich shell-pink colour. *J.*

TREES AND SHRUBS.

SPIRAEA DISCOLOR.

Perhaps more commonly known in gardens as Spiraea ariaefolia—a name apparently given to it five years later than that of S. discolor—this species is amongst the most attractive of the the genus. It is a native of Western North America, and was introduced to cultivation in this country by Douglas in 1827. S. discolor (Fig. 182) forms a large, bushy shrub ten feet or more in height and considerably more in diameter, and is a handsome subject if grown as a specimen plant where it has a dark background; it is also attractive if placed towards the back of a mixed border of shrubs. It is absolutely hardy, grows vigorously in loamy soil, and is easily raised from hard-wooded cuttings.

Although the growths are erect at first, they become branched and arch gracefully; the ends of the branches, which are downy when young, becoming pendulous and terminated during July with drooping, feathery panicles of small, creamy-white flowers. The leaves are ovate in outline, and from two inches to four inches long, those on the flower stems being rather smaller, with their margins lobed and sharply toothed. They are rich green and hairy on the upper surface, the lower surface being thinly clothed with grey felt.

S. discolor should be included in every collection of shrubs, as it is undoubtedly one of the most beautiful of summer-flowering plants.

BERBERIS YUNNANENSIS.

This rather rare Barberry was discovered by Delavay in Western China in 1885, but several years elapsed before it was introduced to this country. It is a deciduous shrub of good habit, forming a dense, bushy plant composed of stout, erect growths up to six feet tall. These growths are deep red in colour when young, changing in the second year to grey, the lower halves being furnished with three-parted, stout, yellow spines, an inch or more in length. The leaves, which are borne in clusters, are obovate, the apex being short-pointed, and the base tapering to a short, slender stalk. They are about an inch in length, have entire margins, (though those on the sterile growths are sometimes dentated), and are rich green in colour, but paler beneath.

The flowers are borne in pendulous clusters on slender stalks one inch or more in length. They are pale yellow, and large in comparison to those of most of the Barberries, being three-quarters-of-an-inch in diameter. These are followed by a profusion of oval fruits about half-an-inch in length, of a bright red colour, the bases (when young) being tinged with a plum-coloured bloom.

Berberis yunnanensis is a valuable shrub for autumn effect in the garden as the foliage becomes tinted to almost the same colour as the fruits, while the rich colouring of the young growths makes it additionally attractive throughout the winter. This Berberis is closely related to B. diaphana, another native of Western China, and apparently differing in its leaves, which have toothed margins and in having more flowers in the clusters. *A. G. F.*

CISTUS LAURIFOLIUS.

This is one of the most useful of the Rock Roses, since it is the hardiest and, being rather a stiff-habited shrub of sturdier build than most, it is able to withstand strong winds without shaking loose. It is a first-rate subject for dry banks of poor soil. In such conditions it will make a bush of about six feet in height and as much in diameter. The ovate or ovate-lanceolate leaves are dark green, with pale under parts. The margins are wavy, and from both surfaces an aromatic gum is exuded which at certain times gives a delightful fragrance.

Although C. laurifolius is not so striking as some other species as a flowering shrub it is distinctly effective when covered with its pure white blooms, two inches to three inches across, which are produced in erect panicles six inches or so in length. The flowers usually appear about mid-summer and continue for several weeks.

C. laurifolius is a native of south-west Europe, and was introduced about two hundred years ago. It is believed to be one of the parents of the well-known hybrid, C. Cyprius. It is not a long-lived shrub and is liable to get gaunt and lanky, but it is very easily replaced either by cuttings, which strike readily, or by seeds. In my woodland garden this Cistus does its own propagation, self-sown seedlings frequently appearing. In any case, seeds sown in drills in the open germinate quickly, and thus a fresh stock is available with a minimum of trouble. *A. T. J.*

GENISTA TINCTORIA.

If our native Dyer's Greenweed is not in itself a plant of much garden merit it has given us certain forms of undoubted value. In these autumn days, for example, there are few more desirable flowering shrubs than G. tinctoria var. elatior. This is an upright-growing variety, attaining a height of four to five feet, and producing long panicles of vivid yellow flowers at the tips of its slender, leafy branches. There is no other shrub that I can call to mind which is so useful as this is for affording a pleasing break of yellow among the later Ericas of the Heath garden, for it is in full bloom after Cytisus nigricans is over, and it is incomparably better for the purpose suggested than the autumn-flowering Gorses.

The quite dwarf, compact and mound-forming G. t. flore pleno, with its very deep green foliage and branches, is another departure afforded by this species. It is a plant of first-rate importance to the rock gardener, for it will endure the poorest and hottest of soils, upon which its rich green is always cheerful, and the latter it will smother with deep golden blossoms in the later summer. This little shrub is, moreover, always orderly and neat and presents no difficulty in cultivation. There are other forms of G. tinctoria, the most distinctive being var. mantica. This is a plant of middle height, usually not above two feet, and it makes a loose, tangled, semi-prostrate bush of slender stems which, with the leaves, are more or less hairy. As a rule this variety is always the first of its set to flower, the panicles of brassy-yellow blossoms often appearing in quantity during late June and continuing for two months. Compared with many Brooms of its season, this cannot be considered a subject of outstanding quality, but it is, nevertheless, always distinct and interesting. *J. R. W.*

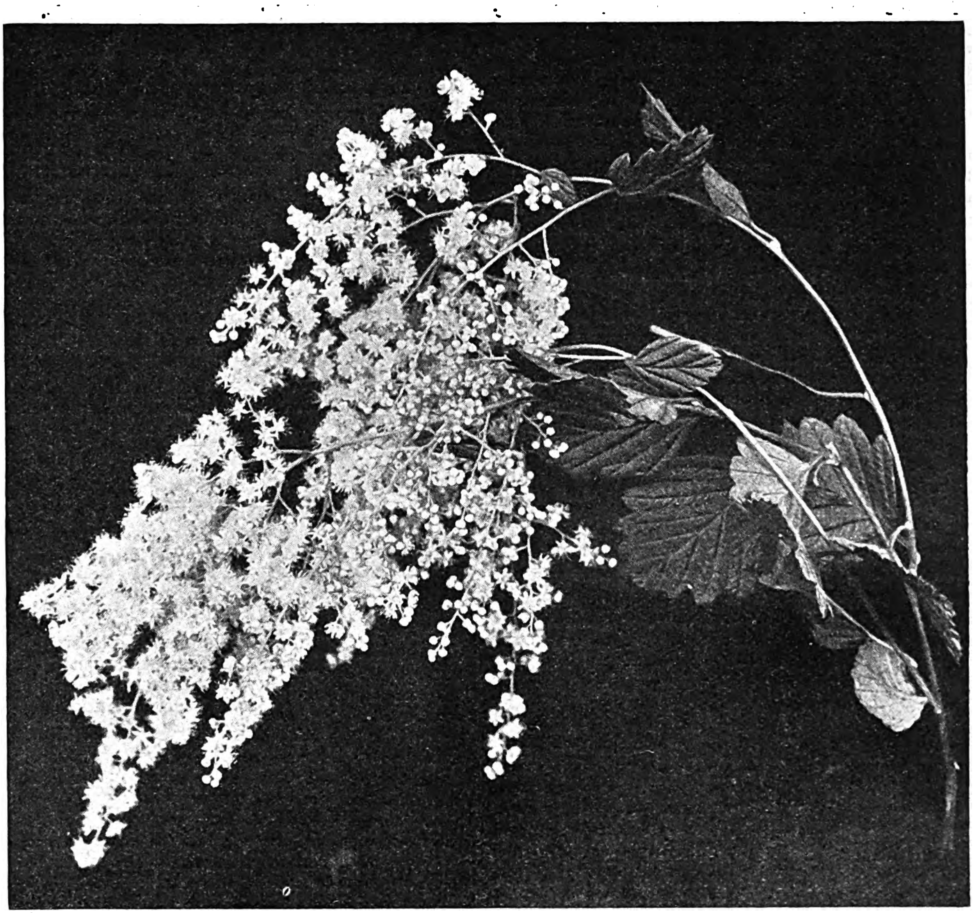


FIG. 182.—SPIRAEA DISCOLOR.

EUONYMUS JAPONICUS.

The typical Euonymus japonicus was introduced from Japan many years ago. It is a most useful ornamental evergreen shrub for town gardens, and in many towns on the south, south-west and south-east coast specimens ten feet or more in height are frequent. In some favourable situations it is largely planted as hedges. Variegated varieties are numerous and their bright, glistening foliage renders them very attractive during winter. Specimen plants may be grown in large pots or in tubs and are most useful for placing upon the terrace and in various other positions at the approach of winter, when tender subjects have been removed. Shapeliness may be maintained by judicious pruning.

Small plants are suitable for planting in beds for winter effect and for filling window boxes. For this latter purpose they are largely used in towns and often thrive where many other subjects perish.

There are dwarf, compact Euonymuses suitable for the rock garden and a delightful trailing form is grown under the name of Euonymus radicans kewensis. E. radicans may be used as a climbing plant on old walls, and although growth is slow it emits roots from the branches in the same way as Ivy and becomes self-supporting. Euonymus radicans tricolor has white, yellow and red variegation; it grows well in light soil, is one of the hardiest variegated forms, and is attractive as an edging to beds, paths or carriage drives. *C. Ruse.*

NOTES FROM WISLEY.

A mere collection of plants in a garden, while interesting enough to those who make a study of the particular genus or species in question, frequently fails to give much pleasure to the average garden visitor, even though he be a keen gardener. There are many cases, however, in which a judicious arrangement of the plants or their surroundings may make all the difference and create a garden picture capable of being appreciated by everyone. For instance, the Pinetum at Wisley has never been very popular with visitors, for although it contains an interesting collection of Conifers, which includes several choice specimens, there has been little or no attempt either to plant for effect or to make an attractive walk through it. Fortunately, this error is being remedied, as a broad grass walk, nearly four hundred yards long, is in course of construction, which should create a new interest in this section of the gardens. It leads from the newly-formed Fernery, which incidentally, now begins to look extremely well, and will pass into the large Pine wood near the Director's house. It is hoped to plant this wood with Rhododendrons and to make a feature of the long pond which lies concealed there. The large quantities of peat which occur on the banks will greatly facilitate the establishment of Ericaceous subjects. It is also proposed to build a bridge over the public footpath dividing the Pinetum, to replace the small gates in the fence which are in use at present.

With regard to the Pinetum itself, several trees which have been hidden by Brooms and Brambles—as, for example, a pretty, pendulous variety of Picea pungens glauca—will be exposed to view and their health should be stimulated by the clearance of the surrounding undergrowth.

The soil at Wisley is not at all unsuited to the growth of Pines and Cedars, and although it is drier than that to which most Spruces are accustomed, well-grown specimens of Abies grandis and Abies Vietchii are to be seen. Another Conifer of which there is an exceptionally fine specimen, and one which is, perhaps, the largest in this country, is Pseudotsuga Douglasii var. Fretsii, the foliage of which has a strong scent of Lemon and Verbena.

In addition to those growing in the open there are some Conifers in pots, and these lend interest to the plants in the alpine house. Naturally, they are chosen from among the dwarf-growing kinds, and their stature is further limited by the way in which they are potted, whereby the amount of soil available is reduced to a minimum. Among the latter may be found examples of the Coffin Juniper, the wood of which is said to be used in the manufacture of coffins for the Chinese nobility; Juniperus communis hibernica and J. hibernica compressa, of which some quite aged plants are still less than one foot high. A large and shapely specimen, however, growing in the rock garden moraine, has reached a height of two-and-a-half feet, and there are doubtless many much larger specimens in this country. It would be interesting to know the maximum height to which specimens of this variety have grown. Another interesting Juniper in the alpine house is Juniperus echinaeformis, which, as its name suggests, makes a hedgehog-like plant, while among the Cypresses, plants in pots include Cupressus tetragona minima and C. Fletcheri with grey-blue foliage.

Although few plants are in bloom in the alpine house at the present time, one may speculate upon the amount of flowers to be produced next year, and among other subjects which show promise of abundant bloom are those of Primula Loezii, a rare plant of which there are many sturdy crowns. There are also many healthy plants of the blue Poppy, Meconopsis Baileyii, which have been raised from seeds collected from the group which flowered in the Wisley rock garden this year. Among the few plants actually in bloom mention may be made of Campanula strigosa, an annual with rather large flowers, and of C. fenestrellata, which has produced flowers almost without a break since June. A late-flowering Saxifrage is the half-hardy S. Fortuneii, with red pedicels and red foliage that begins to die down almost so soon as the flowers appear.

Many newly-received Crocus species are in flower in the alpine house frames, including C. ancyrensis, with large blooms of a very pale lilac; C. hadriaticus lilacinus, and C. hyemalis Foreii, the small, white perianth of which has violet markings on the reverse and encloses deep violet anthers. These Crocuses, together with other hardy corms and bulbs suitable for growing in a rock garden, will soon be transferred to new quarters, as four new cold frames, each twenty-four feet long, have just been completed, and make a welcome and long-wanted addition to the alpine department.

On the rock garden, Gentiana sino-ornata is still making a brilliant display of deep blue. Another blue-flowered subject, Linum monogynum, is also flowering. Further bloom is provided by the secondary flowering of Rock Roses and of Cistus, such as C. florentinus and C. crispus.

The duration of the autumnal colour effects has been rather short, particularly in the case of the Pear plantation on the hill, which usually provides a brilliant spectacle lasting for some time. There are many trees and shrubs, however, which are still beautiful on account of their fruits. Among the most conspicuous of these are Berberis Autumn Beauty, with its large, coral berries, and a Chinese form of Cotoneaster rotundifolia. The leaves of the latter, although apparently evergreen, fall during the winter, but the bright scarlet berries have been known to persist so late as May. Other Cotoneasters valuable on account of their berries are C. lactea, C. serotina and C. pannosa, which are all rather similar, having evergreen foliage and an abundance of small, brick-red berries. One of the most ornamental of the trees which are valuable for their fruits as well as their flowers is Pyrus Eleyii. In this case the beauty of the fruit is by no means skin deep as the flesh is deep crimson right to the core. *J. E. Grant White.*

NOTES FROM A WELSH GARDEN.

That such a fine old plant as Schizostylis coccinea, appreciates an abundance of moisture seems evident, for after a wet summer and drenching autumn, a patch of it is carrying more flowers, and these of larger size than I can remember ever having seen before. While there may be much to be said for the pink-flowered variety, Mrs. Hegarty, this can never give the glow of warm, rich colour which the old plant affords, and which blends so sympathetically with the hues of autumn. It has so happened that the autumnal tints of a young specimen of Liquidambar styraciflua, about ten feet high, were at their brightest just when a patch of the Kaffir Lily at its feet was at its best. The two together made a wonderful conflagration of colour.

Autumn colour, on the whole, has been somewhat disappointing this season, owing to the constant wet and high winds. That reliable old stand by, Azalea pontica, has done its best, and a very good best it has been, especially where there are a good many bushes, for as these very seldom colour at the same time, one or other will always be on show, and one gets a long rotation. There may be many shrubs which afford more vivid hues, notably Vaccinium corymbosum, Euonymus planipes and E. alatus, but these more often seem to surrender piecemeal. Azalea pontica, on the other hand, almost invariably flushes into colour in its entirety, every leaf responding simultaneously to the change. Moreover, each of the various bushes of a group will not only ripen its foliage at different dates, but each will be, so to speak, self-coloured—one all bronze, another all crimson, and a third yellow. That, at any rate, is the rule where a goodly number of these shrubs is growing on the thin soil of an open woodland slope.

Lithospermum rosmarinifolium came into flower this season early in November, that is before Gentiana sino-ornata had ceased, and their respective colours were exactly alike. The former came through the destructive frost of last spring unharmed, and the plants are in an exposed position, but I always grow them in the poorest of stony soil on the brink of a dry retaining wall. One of the largest plants of this singularly beautiful Lithospermum has close by it some examples of Coronilla glauca breaking into blossom, which means—frost not intervening—that one will be able to enjoy the brilliant sapphire of the one and the clear yellow of the other in contiguity. But of the two I have always found the Coronilla the more tender.

Though its near allies, Geranium argenteum and G. cinereum, are now dejected, messy heaps of sodden foliage, G. Farreri seems to be but little affected by the weather. In fact, this excellent little plant, surely the most attractive of all its closer kindred, has flowered on and off all the summer, and it is even now carrying several fresh blossoms. There is a singular daintiness and refinement about this Geranium while in size of blossom I know no dwarf sort to compare with it.

Two years ago, I came across an Oxalis in a village on the west coast. It was naturalised in cottage gardens and roadsides. This has been identified as O. incarnata, a native of the Cape, whence it came some two hundred years ago. I believe this species is not uncommon as a cold greenhouse and window plant, but it has proved most amenable to out-door culture here, flourishing in the woodland and other parts of the garden with the best of good will. Moreover, it has flowered almost without cessation since spring, and there are still many blossoms open and to come. These beautiful blooms are much the shape of those of O. Acetosella, but about twice as large, and their colour is a beautiful shade of pale bluish-lilac without any veining, just the colour of Cardamine pratensis. In foliage and habit, O. incarnata also has no little resemblance to our common Wood Sorrel, but it is much more susceptible to changes of temperature than the latter. This is very noticeable when the two species have got mixed together in the woodland, for the exotic will fold its leaves immediately to changes which do not affect the native.

The charm of that subtle blending of blue and yellow referred to is emphasised in the rock garden by Felicia rotundifolia which, in spite of the wretched weather, has never been without a sheaf of its elegant blossoms since early summer and it is still bright with colour. These Daisy-flowers, about an inch across, have a rich, golden-yellow disc and rays of an exquisite china blue. They have a resemblance, therefore, to the old Agathaea coelestis, but they are neater and more symmetrical than those of that rather unfinished-looking plant. Hypericum olympicum, with a good late crop of flowers, having been invaded by the lavender-blue blossoms of Convolvulus mauritanicus gives yet another of these blue and yellow harmonies which are so arresting.

Two yellow-flowered, dwarf shrubs which can always be relied upon to afford some cheerful colour at this season are the excellent old Hypericum Moserianum and Potentilla fruticosa argentea nana, or P. Beesiana as I believe it is sometimes called. Mimulus (Diplacus) glutinosus is also a first-rate autumn bloomer here and its golden-buff flowers strike a distinctly seasonable note.

If an absence of sunshine has had a depressing effect upon some late-flowering shrubs, notably Olearia semidentata and a few of its allies, others which one might assume are no less fond of the sun have responded to the high temperature and abundant moisture by producing quite a good second crop of bloom. Fremontia californica, Dendromecon rigidum, Desfontainea spinosa and Leptospermums are among these. The Desfontainea, indeed, has done exceptionally well owing to the wet, the bushes flaring into successional crops of blossom throughout the season. By way of experiment I recently put a specimen of this fine Chilian shrub close to the bog, where there is a good deal of clay in the subsoil and not the best of drainage, and so far it has gone ahead with the best of promise.

Genista fragrans, on a dry, sheltered bank, can usually be counted upon to give some colour at this season, but it is now much better than usual. The fact that it has had practically the whole of its spring crop of bloom destroyed by frost may in part account for this. Close by it is an equally fragrant bush, Daphne Dauphinii, which, coming into flower in November, will maintain a succession of its rich purple blossoms during mild weather until spring. The very sweetly-scented D. Mezereum var. autumnalis ought now to be rivalling the foregoing both in colour and perfume, but the Mezereums do not prosper here. For some reason yet unsolved they simply endure with a bad grace and then expire. Yet in neighbouring cottage gardens they do famously.

Among Ericaceous shrubs, Erica Watsonii (E. ciliaris × E. Tetralix) has made a bright show of colour, carrying on later than either E. ciliaris or the excellent E. Maweana. But the persistent rains have practically spoiled most of the autumn-blooming Heaths, even E. stricta fading much earlier than usual. On the other hand that beautiful shrub Daboëcia polifolia alba, of which the form with the large, almost globular, flowers is the best, has done splendidly, and is even now almost as full of bloom as ever. It has flowered unceasingly since May and will continue until the first hard frost. Phyllodoce coerulea, a rare native of northern Britain, has also enjoyed the moist conditions and yielded a few of the bluish-purple blossoms which one so seldom sees.

Hybrid Pernettyas are carrying a wonderful crop of berries and one's only regret is that these highly attractive and useful little shrubs should have such a passion for suckering. This necessitates discretion in planting, but the fruits are so handsome and remain so long—usually until the little white flowers appear in spring—that a place must always be found for a good group. Though Ericaceous, it is said that Pernettyas will do well in calcareous soil, which is yet another recommendation. *A. T. Johnson, Ro Wen, Conway, North Wales.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

THAT incomparable autumn flower, Gentiana sino-ornata—incomparable for its colour and the profusion in which it displays it, for its vigour and easy propagation—has but one weakness, its splendid blue cannot withstand the drenching rain which has been so frequent of late. It washes the colour out of expanded flowers; but, happily, even on November 5, there are many buds still to open.

In such an open season as this Fatsia japonica (still known in some gardens by the discarded name of Aralia) is indeed a noble evergreen. This time last year its display was marred by an early sharp frost; but now the bushes are plentifully set with erect panicles of round flower heads resembling carved ivory, well set off by the broad glossy leaves.

Bulbs of Lilium auratum, brought here direct from Yokohama, always flower later than established plants, and have had their blossoms sadly tarnished by October rains. Not so the flowers of L. philippinense formosanum, some of which delay opening till late autumn, and pass without stain through very dirty weather. In form and purity this is one of the loveliest Lilies.

Now that half the woodland is bare of leaves, one appreciates the value of Zelkova crenata, one of the largest deciduous trees of Japan, which delays assuming its fine, golden, autumnal robe till October is past. Z. acuminata, also from Japan, is even later in the seasonal change. On our western seaboard, Chionanthus virginica does little towards fulfilling the promise of its generic name—meaning Snowy Flower—for it requires hotter sunshine than it gets here to sheet itself with blossom as it does in the south-eastern United States. Here, indeed, it does flower in July, but far too sparsely to suggest anything like snow; but its ample foliage turns bright yellow in November, after most other trees stand stripped.

From the same south-eastern States comes a shrub far better worth growing—to wit, Clethra acuminata, which never fails to produce plenty of racemes of fragrant, white flowers in August, and thereafter to stand robed in fine rich gold.

Those who grow Daisy Bushes—*i.e.*, Olearia species—when they see the clouds of seeds scattered by the winds of autumn, may have speculated, as I used to do, to what purpose was this waste of living matter. Our own too familiar Groundsel, nearly related to Olearia, takes possession, if allowed, of every scrap of available soil; but it is very seldom that one may find a self-sown seedling of Olearia. The reason for that is two-fold—first, there is very little uncultivated ground in this country so thinly occupied by native vegetation as to admit alien colonists; second, rabbits are almost everywhere and greedily devour such seedlings as may root themselves. It was interesting, therefore, to find a wide space left bare by the removal of a large Rhododendron ponticum densely peopled in the following year by hundreds of seedlings from a bush of Olearia macrodonta near at hand. *Herbert Maxwell, Monreith.*

PLANTS NEW OR NOTEWORTHY.

A RUBUS HYBRID OF HORTICULTURAL VALUE (R. BARKERI ?).

IN 1898, the late Mr. S. D. Barker discovered near Lake Brunner, Westland, a single wild Rubus plant of a form not previously observed. From a portion of this, Dr. L. Cockayne, F.R.S., was able to propagate and distribute a number of cuttings. He described the new form as R. Barkeri, and under this name it has since become well-known and highly valued in cultivation. Only on one occasion has it been known to flower. In his book, *The Cultivation of New Zealand Plants*, Dr. Cockayne thus refers to it (p. 22): "*Rubus Barkeri*, with its leaves differing in hue at every season, but always beautiful, is ideal for draping a low wall supporting a steep bank (see Fig. 1) as well as for the bank itself." The figure is a photograph showing the splendid use made of the plant in the Queenstown Public Gardens. Further details are given as to its value and propagation on p. 58, where it is remarked, "Probably a hybrid between R. australis var. glaber and R. parvus."

Later, Dr. Mackay of Greymouth, discovered a second wild plant of similar character, but differing in certain details. This plant is now being brought into cultivation and for it Dr. Cockayne proposes the name R. Mackayi.

In the summer of 1927, under the guidance of the discoverer, I had the pleasure, in the company of Mrs. and Dr. G. E. Du Rietz, of Upsala, and of Dr. Cockayne, of seeing this plant in its habitat. The plant bore a few flowering panicles at the time, and later, Dr. Mackay forwarded to Dr. Cockayne ripe achenes for sowing. The seedlings should throw further light on the origin of the parent form.

That both R. Barkeri and R. Mackayi are hybrids of which R. parvus is one parent appears certain. As to the other parent, there remains some doubt, as R. schmidelioides is also present.

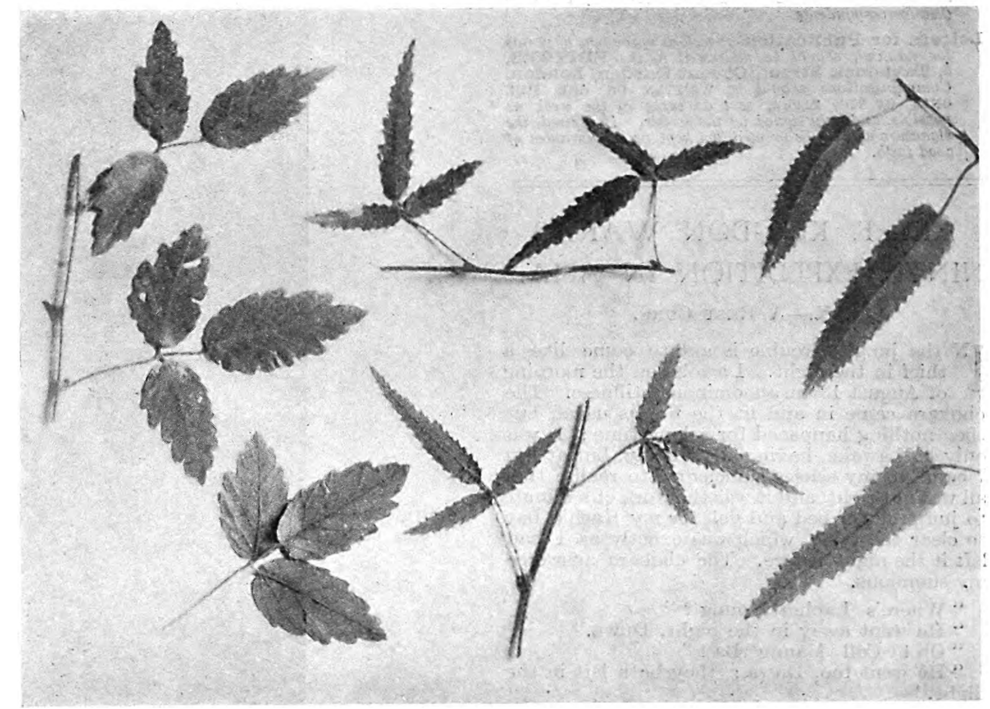


FIG. 183.—A HYBRID RUBUS.

Left, R. schmidelioides; centre, the new hybrid; right, Rubus parvus.

I have endeavoured to throw further light on the problem by artificial crossing. A female plant of R. parvus, collected in north-west Nelson, was grown at Feilding, and pollenated from a wild plant of Rubus schmidelioides var. coloratus, of that locality. Six hybrid plants were raised, and these I described in the seedling stage (*Trans. N. Z. Inst.*, Vol. 58, 1927, p. 51). Four of these plants have grown luxuriantly, and are now (August, 1927) being layered to secure a supply of plants for distribution, These six plants are all extremely alike, and since they offer distinct horticultural possibilities are here further described. They have the general habit and beautiful colouring of R. Barkeri, but differ in the shape of the foliage. The leaves are trifoliate (Fig. 183), the leaflets very similar in shape to the leaves of R. parvus, but narrower than those of either R. Mackayi or R. Barkeri. Alternately and somewhat distantly placed along the trailing stems, they form sprays of great beauty. The dark bronzed colour of the upper surfaces in autumn and winter, relieved by the distinct, delicate venation and the regular serrate-dentate toothing, contrast finely with the golden yellow of the stems and prickly leaf-stalks. As the plants are hardy and of easy propagation, they should prove a welcome addition to the list of foliage plants and provide a means of clothing banks and walls otherwise difficult to adorn. Scientifically, they are of importance as giving strong support to the theory of the hybrid origin of R. Barkeri and R. Mackayi, a support all the more welcome as the wealth of wild hybrids in the New Zealand flora is not yet appreciated at its proper value. *H. H. Allan, Feilding, New Zealand.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XIX.—A REST CURE.

IN the jungle, trouble is apt to come like a thief in the night. I awoke on the morning of August 13 in an ominous stillness. The chokara came in and lit the fire as usual, but then nothing happened for a long time; I was only half awake, having slept badly, but at last I came to my senses sufficiently to realise that all was not right, and it was the work of a minute to jump out of bed and yell for my Kachin boy to clear the table, which was exactly as I had left it the night before. The chokara answered my summons.

"Where's Laphai Noung?"

"He went away in the night, Duwa."

"Oh! Call Maung Ba!"

"He went too, Duwa; they both left in the night."

This was a bore, because unexpected. I ordered breakfast, and thought things over. The fugitives had taken a good share of the remaining food, and some of my waterproof sheets, and without my cook, bad as he was, I could scarcely look forward to a week of unalloyed bliss. I had one small savage left, the coolies had dispersed, neither mail nor rations had come, we had abandoned the safe haven of my base camp, and were normally fifteen marches from Fort Hertz and help.

On the other hand, if the expected supply did *not* come, sooner or later, my servants would have gone off, anyhow, if only to get food. On the whole, the position was not much worse than if they had stayed, and I decided that the only safe plan now was to return to Fort Hertz, by forced marches, get rations, enrol new men, and hasten back to camp. My botanical collecting would suffer, of course; on the other hand, I could collect in the jungle, in a country which had never before been explored botanically. If I could reach my base camp by September 25, I should be in plenty of time for the harvest.

Two starving Nungs, searching for roots and berries, passed, and I sent them to beat up coolies. Tents, camp furniture, and everything else that could be spared was jettisoned; and with my bedding, food, a change of clothes, and botanical press, we started for Fort Hertz at midday on August 15, seven coolies carrying light loads. Owing to the late start, we only covered a single stage by nightfall. Next day, however, we pushed along to some purpose and having reached Gawai, the normal stage, halted only for a meal. It was not possible to do another stage—a long one, that afternoon, but we marched till dark, and turning aside from the path, reached a Nung hut buried in the jungle, and slept there. On the third day we reached Hpalangdam, and after a meal, covered another stage by nightfall; and on the fourth day we did two whole stages, to the Nam Tamai bridge, where we halted, exhausted, having done six stages in three-and-a-half days' marching. The days were fine and sunny once the sun had lapped up the thick morning mist, but the heat was stifling, and the biting flies a persecution. Rain fell mostly at night, in heavy thunderstorms; we had undoubtedly struck that mixed blessing, a break in the monsoon.

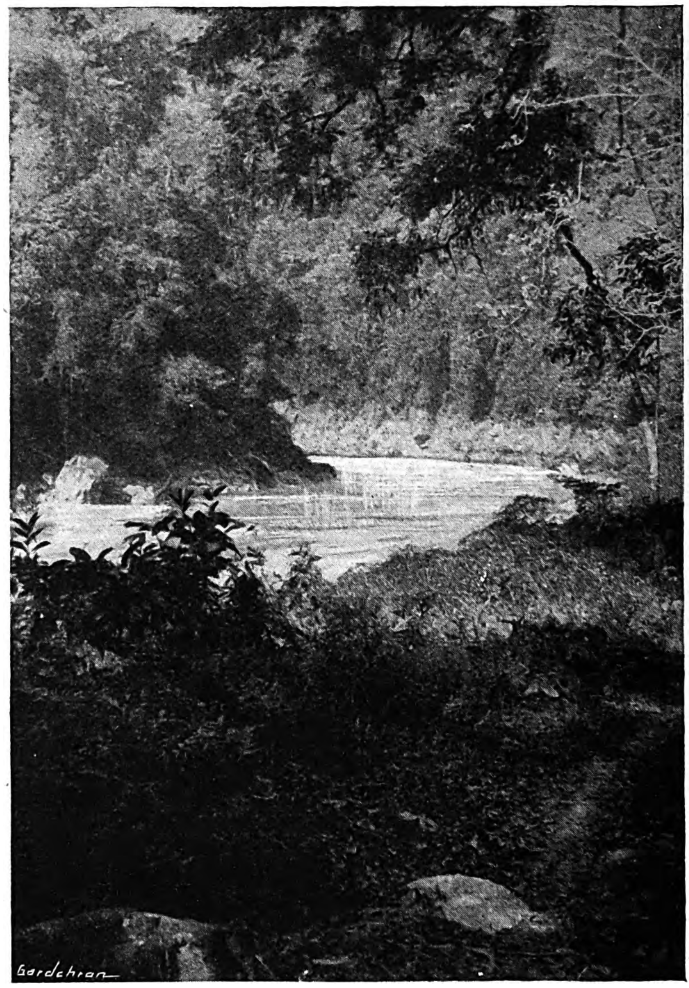

FIG. 184.—THE NAM TAMAI.

A fruiting tree of Engelhardtia in the foreground.

On these long marches, I amused myself collecting plants, and added many specimens to my Indo-Malayan bag. In the wet thickets were large, coarse Zingiberaceae, mostly with white flowers, though some species of Hedychium were gaudy with red, orange or cream colours; they looked like clusters of insects, the antennae projecting. Some are epiphytic, generally growing out horizontally, or lolling down, though the flower spike always turns stiffly erect.

There were a few ground Orchids in bloom, especially species of Odontochilus, some with white, others with yellow flowers, and I found a shady rock covered with the large, milk-white blooms of a Diplomeris, which has a flat flower rather like a Miltonia. By the path-side were species of Commelina in flower, social clumps of Impatiens, Begonia, Polygonum, and so on. Epiphytic plants included three species of Lysionotus, Aeschynanthus grandiflora and others, Melastomaceae, etc. On the banks one noticed a few Gesneraceae, mostly species of Chirita. Amongst the forest trees were many species of Ficus (F. cunia, etc.), Juglans, Engelhardtia, a Myrtus with white flowers, and up on the higher ridges, Pinus excelsa, which is not seen to the west, in the basin of the Mali river. Near Gawai, where the soil is sandy, Gleichenia liniaris is common.

At Panglamdim there were no coolies, and consequently we were not able to start until the afternoon; as a result, we only did one stage on the 19th. We were now marching south-westwards, counter to the ranges, with long ascents and descents. It was four stages to the Tisang river, and despite our efforts it took us three days. Just before we reached Nogmung on the Tisang, I met a man from Fort Hertz, bringing up my mail—but no food. However, it was pleasant to get some news. At Nogmung I was taken violently ill, and next morning would have given almost anything to have been told that there were no coolies available. Unfortunately, they paraded in force; and as the stage was only nine miles, I decided to crawl on. No power on earth could have made me do a double stage that day. As it was, the overflowing Tisang had turned the valley into a lake and we waded knee deep for miles, poor me being horribly and disgustingly sick at intervals, and hoping to die quickly, since it could not be painlessly. Arrived at the hut after nine hours of misery I doped myself with morphia (I know my reaction to this dangerous friend to a hair), crept softly between the blankets, and slept for ten hours. Next morning I was shaky but otherwise fit, and we did a hard stage over the highest mountain, followed by a double march on the 24th, which brought us to the banks of the Mali, on the edge of the Hkamti plain.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, October 1, 15, and November 5, 1927.

In the six days' marching from the Nam Tamai to the Mali, I met with several interesting plants. On the topmost ridge, a big scarlet-flowered 'Irroratum' Rhododendron was still in bloom, making a fine show. Five years previously, when marching from China to Hkamti Long, I had passed this way in November, and, noticing this very plant, had collected seeds of it (K.W. 5,533). Here it was in flower (K.W. 7,327), but, of course, there are no seeds under the latter number. It is a forest tree, twenty feet to thirty feet high, but it grows only on the wind-swept ridge, where there are just a few specimens; and like all these Burmese 'Irroratums', it flowers very late; it could hardly have opened before August! The flowers are a rich, glossy scarlet, evenly marked all over with small, crimson question marks, and fleshy, pinched up at the base into five pocket glands. The trusses are fat, containing about fifteen flowers each, the leaves fairly large, and dark green.

All the Burmese 'Irroratums' have red flowers, but though a number have received names, such as R. Kyawi, R. facetum, R. ombrochares, it is doubtful whether they are all sufficiently distinct to warrant being kept up. They are magnificent plants, but not quite hardy. As a rule, they occur scattered through the temperate rain forest, and when in full bloom are a gorgeous spectacle, being easily seen, occurring as they do beneath the main canopy of foliage; also they spread a carpet of glowing corollas on the ground at their feet.

Near the same place, I collected a Crawfurdia, and a beautiful little white-flowered Begonia, with thin, almost membranous leaves, drawn out into a very long drip tip. This species grows only on trees, at about 6,000 to 7,000 feet altitude, with the tips of the leaves hanging downward. Another remarkable species grows amongst boulders in the beds of torrents—or, rather, in the bed of *a* torrent, for I saw it nowhere else—and has quite regular, almost linear leaves; but this was not in flower. A third species, found growing on rocks, has large, leathery, elephant-ear leaves pressed closely against the surface, and white flowers.

A species of Garcinia was not uncommon in the hill jungle, and furnished us with fruit, refreshing and of a sub-acid flavour, which the Nungs climbed for, throwing down great bunches. These fruits, which are bright yellow, and the size of a small Plum, sprout all along the branches, and sometimes even from the main trunk.

On the last day, after a tiresome and slow boat journey against the powerful current, under a bright sun, I waded three miles across the flooded fields to Putao village, and so up the ridge to the Fort, where the Superintendent and the Commandant met me. It was August 25, and I was four days up on my schedule, thanks to those forced marches; to cover fifteen stages of hill jungle in ten-and-a-half days at the worst season of the year was not bad.

What a relief to go into a large, airy, waterproof bungalow! To lounge in a long chair, nay, to sleep on a bedstead—I had left my camp bed behind, of course, and had been sleeping on the ground—was bliss. I had meals with the Superintendent, which relieved my servant of one of his duties; and beyond attending to my plants, I did nothing for the next three days, except lie in a long chair and read.

Meanwhile, I acquired two more servants, but being sick of the sophisticated kind, got hold of raw Nungs, or in other words, coolies, one intelligent, accustomed to seeing an occasional white man in the distance, the other stupid, and about as familiar with white men as he was with white elephants. I also bought five bags of Rice, and other necessities of life for myself and staff. It was hot and clammy on the plain, a thousand feet above sea-level, at the end of August, and we had plenty of rain; now and then the high mountains at the northern end of the plain showed up, but generally the clouds clung to them.

There was not much in flower, or I was too slack to go and look for it. An everyday sort of Honeysuckle was common, also a few Acanthaceae (Strobilanthes) and other stuff. I found the Melastomaceae tiresome plants to preserve; the leaves seem to sweat and become disarticulated, and the whole specimen breaks down into its component parts. Aeschynanthus is nearly as bad. I spent a restful week at Fort Hertz, reading the papers, and talking once more with white men; I do not know what it is like not to talk with a fellow creature for months, but I can testify to the dry rot which sets in as a result of not seeing a white man to talk to for months!

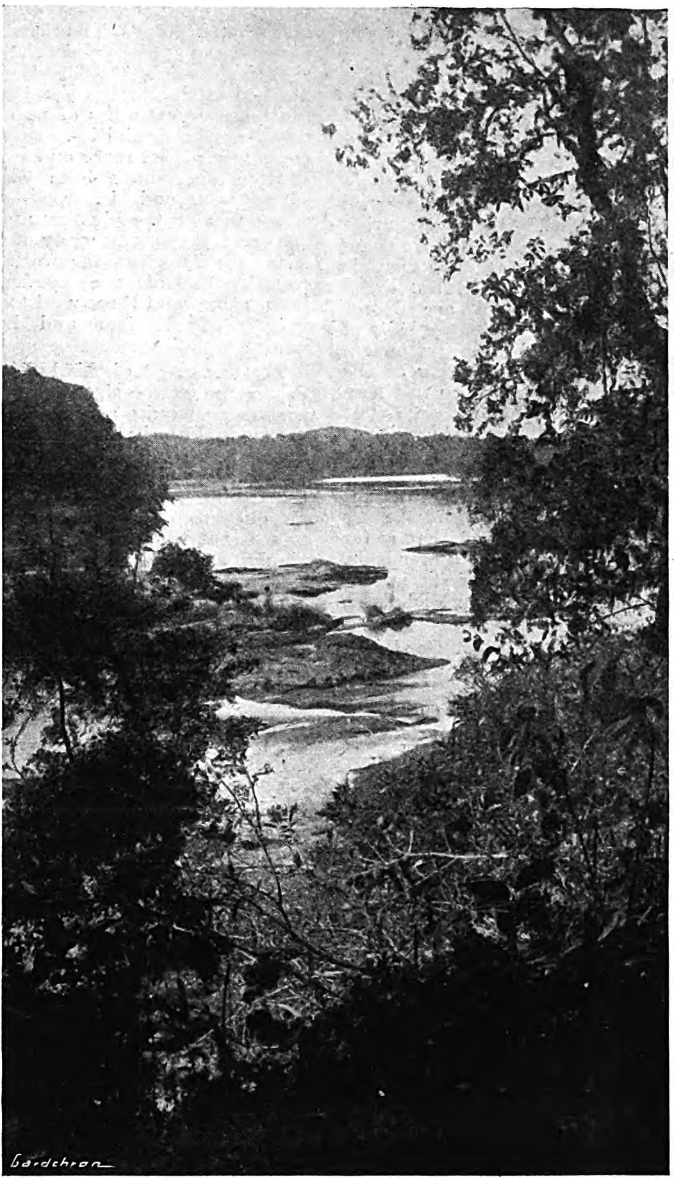


FIG. 185.—THE WESTERN IRRAWADDY, OR MALI, RIVER AT LOW WATER.

Sub-tropical rain forest.

However, I wanted to be back by September 25, and the prospects of double marching on the return journey were not bright. That meant seventeen marches to my base camp, with the chance of being held up a day or two for lack of coolies; so I determined to start on September 2. It was a horribly wet day, but as I was able to float down the stream in a dug-out, the first stage, that did not matter. I looked forward to the weary marches over the ranges and up to the Nam Tamai with little enthusiasm; but brightened up when I reflected that in another two months, I could start for Assam. The worst of the season was already over. *F. Kingdon Ward.*

CHATSWORTH, PAST AND PRESENT.

Those who would compare the past with the present might well begin examining one of those fine old engravings by Jan Kip, which have so great an interest for garden-lovers who realise how much the present owes to the past. The engraving, one of many which were published in that rare French book of 1714-16: *Le Nouveau Théâtre de la Grande Bretagne,* in which Kip, Knyff and other gifted artists collaborated, and which is now available in *English Houses and Gardens* (published by B. T. Batsford), shows the Chatsworth of other days. But there have been many changes. One must assume that Knyff saw a wide canal, with bridge connecting the western terrace, between Chatsworth House and the Derwent, since it appears in the drawing from which Kip made his engraving; but it no longer exists, nor is it known what purpose it could have served. Gone the range of low buildings to the north-west of the house, gone the *parterre de broderie* to the south of them. The garden on the south front lives, but with less elaborate adornment. Gone the vast series of intricate bedding on the east front; indeed, one wonders how the gardeners of those days got all these breadths in, since the original mansion could never have been very far from the steep rampart of hill which Paxton made such wonderful use of in later times. Given a true perspective, there might be many acres of ornate flower gardens between. But was the perspective true?

Let us admit that there were great gardeners about in the early days of Chatsworth. Whether or no the famous Le Nôtre played any direct part there—and probably he did not—he had able disciples. One has read of Grelly, a Frenchman, who was particularly clever in water devices. Among the records in the Chatsworth library is a large volume, beautifully kept in a scholarly hand, showing payments made to various artists and workers late in the seventeenth century, and one of them named Grillet was, perhaps, the "Grelly" of some writers.

Grillet (or Grelly) may have anticipated Paxton in the first garden of the west front, now called the Italian Garden, also with the *parterre de broderie* on the southern portion already referred to. The Italian Garden exists to-day, and very beautiful it is, although there is no trace of the elaborate bedding shown by Knyff and Kip. Instead, there are wide walks and broad areas of grass, broken by vases and clipped Yews, with stone-framed mounds carrying golden Yews amid which are drifts of Berberis stenophylla. There are Roses on the terrace walls, and here and there belts of tawny Snapdragons, but of bedding, so-called, there is none whatever. Nor, standing at the front of the terrace, and looking down to where there may once have been a large canal, but where indubitably there is to-day the river with its picturesque bridge on the right, can one feel that it would be in tune with the surroundings. But there is at the middle of the terrace garden a round pool with what is known as the Duke's Fountain, and that is far more in keeping than the gayest of flower-beds. Among trees of particular interest is the Spanish Chestnut planted by the Tsar Nicholas I, in 1816.

No more garish than the Italian Garden is the garden on the south front. The same note of cool, spacious lawns, wide walks, and ample water is struck. Flowers there are, admittedly, but not in the form of wide borders and large beds. When one states that the brightest floral objects are the hedges of Monthly Roses one has, perhaps, paid the best tribute that could be paid to the standard of taste which governs the planting. Far to the south of the grounds lies the Canal Pond, containing the famous Emperor Fountain.

Where, however, are the flower beds of Chatsworth? There are few anywhere. Perhaps the nearest approach to bedding is in the French Garden, which is close to the buildings on the east side. It fronts what was once the Orangery, but which is now a Camellia house. Here there is really bedding, albeit of no gaudy kind—simply a group of beds of bright, old-fashioned flowers, flanked by rows of tall pillars bearing statuary that was once within the building. A charming place, this French Garden. One lingers by it. And while one gazes, one's thoughts go back to the past, and one wonders what effect it would have had on that greatest of French gardeners, Le Nôtre. Would it have satisfied his grandiose mind, with its stupendous visions? Yes, one wonders. On the whole, one is disposed to believe that its appeal would have been greater to a gardener not less eminent than Le Nôtre—our English horticultural giant, Joseph Paxton.

The hand of Paxton is not apparent everywhere at Chatsworth, although it might almost be said that he belonged to the place, since he went there as a young man and stayed all his life. One may believe that when he found there the gardens and the fountains of Grillet (or Grelly) he was content to leave them, while dispensing with most of the parterres. One can conceive that he widened the lawns and walks, in order to impart that air of dignity which is now so obvious and so satisfying. It is well-known that one of his greatest achievements was the building of the vast conservatory, so often described. *Sic transit gloria mundi!* The conservatory has followed the canal and the parterres into the limbo of past things. A vestige remains, no more. The Great War brought about its destruction. To the present writer, who first saw Chatsworth in the days of his youth, and not again for more than thirty years, the conservatory is a memory, though not a poignant one. And perhaps if Paxton himself could emerge from the shades, to revisit the scenes that must once have been so dear to him, he would not repine. For after all the conservatory was not his greatest work; nor was that still vaster building which later grew out of it, and now stands on the slopes of Sydenham, his crowning triumph.

No, when the Crystal Palace itself passes, as pass it may, there will still remain, ever becoming more and more beautiful under skilful and reverent hands, imperishable in their setting of stone, the gardens which he made on the hillside to the east. Gardens they are, despite the absence of shaven lawn and trim walk. There must be several miles of paths winding in and out over the declivities, every yard skirted by cunningly placed rocks and shrubs. The stone-shifting must have been the work of years. There was, and is, rock—natural rock—in abundance on the high ground above which are the great meres, and many of the emplacements there are doubtless the work of Nature; but countless tons of stone were brought down to the lower slopes and there used to form an immense variety of erections and homes for plants innumerable.

The treatment of this hillside, carried out by Paxton under the sixth Duke, is in its way an achievement quite as remarkable as Le Nôtre's at Clagny, Versailles, and other places in France; the main difference being that the former are surpassingly clever imitations of Nature, while the latter is frankly artificial. One has to get close to some of the larger masses of rock to see that they are not homogenous, but cunningly arranged conglomerations of stone. And just as the abundant supplies of water from the higher elevations were used by Grillet (or Grelly) for the great cascade and fountains around the house, so they were utilised by Paxton for his gullies and ravines. The great cascade is avowedly artificial and nothing but artificial. It has pleased many eminent persons and displeased many more. But Paxton's smaller cascades on the slopes of the hill, amid masses of Rhododendron ponticum and much other semi-wild growth, are so close to Nature as to have all her own charm.

It is there that the chief gardening work at Chatsworth is now going on. The Italian Garden remains, and will remain, the Italian Garden. The French Garden needs, and will receive, little renovation. The lawns, the great walks, the ponds, the pools, the fountains, will not be tampered with. The Chatsworth of to-day will remain, to become the Chatsworth of posterity. But up there, beyond the confines of the formal garden, where Paxton's great work was becoming more and more overgrown with every passing year, where much that he had accomplished was actually hidden by ever-encroaching masses of vegetation—there active renovation is being pursued. Choked ravines are being opened out, new vistas are being out, fresh plantings are being made. On banks that but recently were tangled masses of nameless growth there are now colonies of Azaleas, Hydrangeas, Astilbes, Montbretias, Campanulas, Kniphofias, Pentstemons, Fuchsias and other good things. Coloured Maples clothe the sides of dells. Brakes of Broom; a mass of Clianthus puniceus magnificus clothing a gigantic stone; Ceratostigma Willmottiae with its leaves already assuming the crimson tint of autumn; a clump of Berberis Vilmoriniana, with its ruddy stems stiffly upright and prominent; Senecios here, Olearias there; Meconopsis Wallichii and M. Baileyi in cool spots near water and shaded by rock; Pittosporum Silver Queen against grey crag; ample groups of Liliums—these are but a few of the things one sees in or out of flower—green, red or grey.

Plants old, and plants new, are being used in this great work of renovation. One looks up Fir-clad slopes to see towering pillars of Fern, then down to drifts of lowly Iris under walls. There is not the remotest fear, in what is being done, of any violation, however slight, of the spirit of the past, for the present Duchess is animated by a keen love and respect for the traditions of Chatsworth; and her accomplished head gardener, Mr. J. G. Weston, is a true artist. This writer knew intimately of his work at the once Royal seat in Kent, Eastwell Park, and there, both out-of-doors and under glass, his sense of position and mastery of colour harmonies were unerring. There is enough in what has already been done to show that the restoration of what many will always regard as the most important features of Chatsworth Gardens is in safe hands. *W. P. W.*

FLORISTS' FLOWERS.

NEW CARNATIONS.

THE following Carnations have been registered with the British Carnation Society:—

Lady Daresbury, delicate rosy-blush; registered by Messrs. Stuart Low and Co., Bush Hill Park.

Lady Lamington, deep cerise; from Mr. Thos. Turnbull, Lamington.

G. F. Philips, crimson-maroon; from Messrs. Hewitt and Co., Solihull.

Blanche, white; from Messrs. C. Engelmann, Ltd, Saffron Walden.

Bath Beauty, buff, marked carmine; from Mr. Charles Wall, Bath.

Petunia, light purple; from Mr. Charles Wall, Bath.

Hermione Hastings, deep salmon-pink; from Mr. T. Turnbull, Lamington.

The Hon. Mrs. Hastings (Fancy), pink, with crimson spots; from Mr. T. Turnbull, Lamington.

Felicity Hastings, claret; from Mr. T. Turnbull, Lamington.

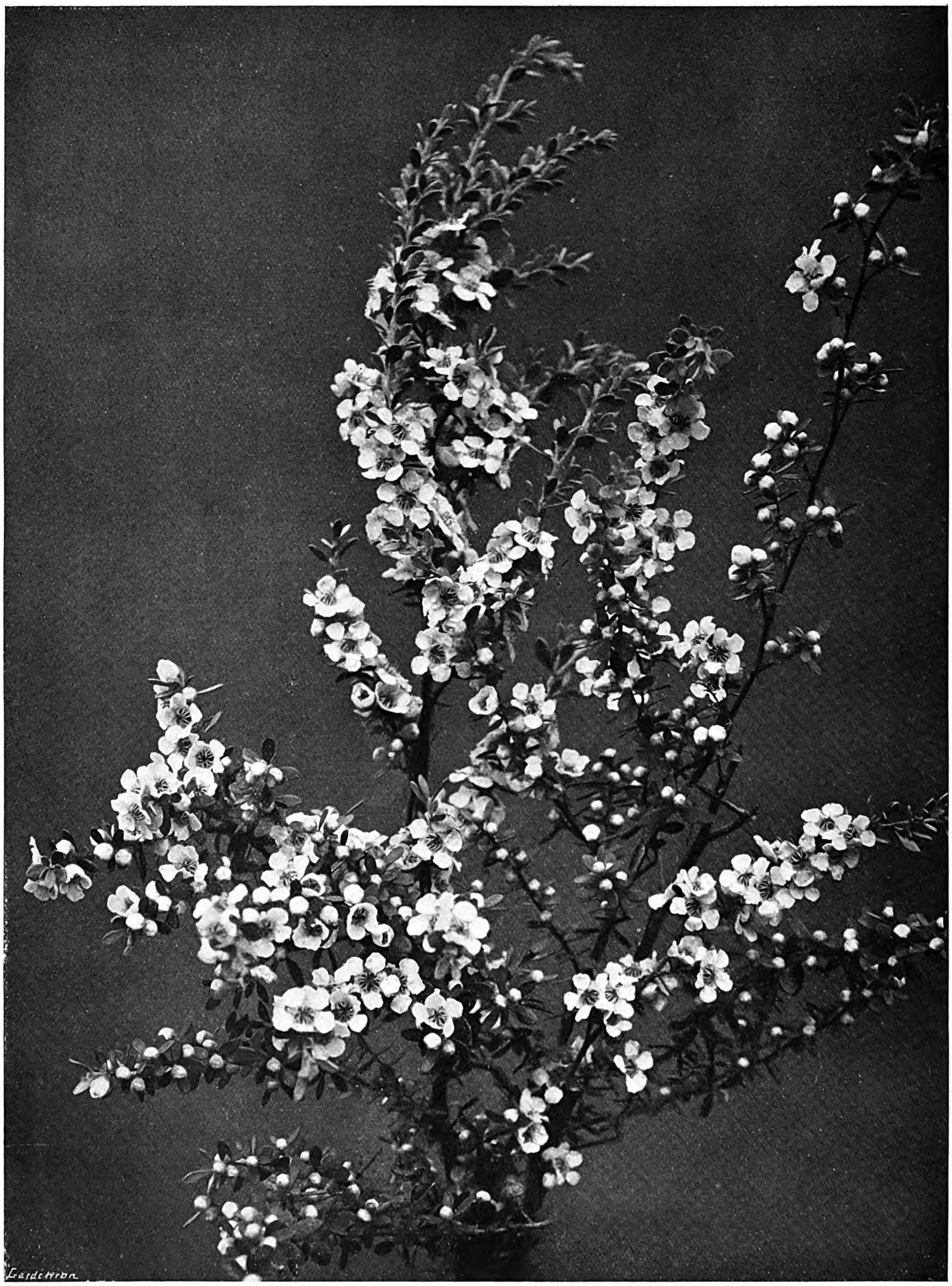
Glorious. This variety, raised by Mr. Charles Wall, of Bath, and which has been in commerce for some time, received an Award of Merit with seventy-six points out of a possible hundred, at Southport Show.

ROSE GARDEN.

BURNET ROSES.

ALTHOUGH the flowering season is comparatively brief, there is a unique charm about the Burnet Rose (Rosa spinosissima) in all its forms. It is an admirable species for open woodland, seaside and Heath gardens, and one that will thrive in the poorest of dry, hot soils. The Burnet Rose has produced an enormous number of varieties, ranging in stature from little bushes of a few inches to stalwarts of six feet, while the colour of these, doubles and singles, varies from white or cream to yellow, crimson and those with parti-coloured or striped petals. Most of the Burnet Roses have a fresh and delicate fragrance and the blossoms are succeeded by brown or black fruits.

In addition to the type plant, which is some six inches or so in height, with white, cream or pink flowers, some nurseries send out improved forms up to a couple of feet in height, with blooms of from two to three inches in diameter, and these are borne in the greatest profusion on the slender, arching branches. R. s. bicolor nana is a pretty variety with cup-shaped, white blossoms edged with rosy-pink, and one of the oldest and best of the coloured forms is R. s. var Miss Colville (two feet), which has the true Burnet foliage and flowers of a deep crimson. R. s. var. lutea is a lovely Rose of about three feet, with a light, open habit and delightful blossoms, two inches across at least, of a rich yellow. R. s. var. altaica is the giant of the group, a Siberian form, making a sturdy bush of five feet or even more, and its creamy flowers are fully three inches across. *A. T. J.*



LEPTOSPERMUM LAEVIGATUM.

MESEMBRYANTHEMUM.

(*Continued from page* 390).

12—GLOTTIPHYLLUM, HAW.

3. G. semicylindricum, N. E. Br., in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 22 (Fig. 186).—Leaf-pairs obliquely crossing one another. Leaves very variable, 1–2 (or under cultivation sometimes up to 4) inches long, 2½–4 lines broad and nearly as thick, half-cylindric, bearing on the flat face beyond the middle two blunt teeth or a transverse hump or ridge across the leaf, the apical part compressed and bluntly pointed or more or less thickened at the tip, light green, soft and pulpy, pellucid-dotted. Pedicels ½–1 inch long, compressed-terete, 2-edged. Corolla 1½–1¾ inch in diameter; petals acute or minutely toothed at the apex, and according to drawings at Kew more numerous and more crowded than those of G. difforme. Stigmas, valves and cells of the capsule 8. Capsule (of which about 20 examples have been examined) varying on the same individual from 4–7 lines, and on another plant up to 8 lines in diameter when closed, always with 8 valves and cells, somewhat cup-shaped-obconic, slightly 8-ribbed on the outside, and flattish with 8 slight, gaping ridges on the top, whitish-brown; when expanded 9–14 lines in diameter; valves spreading horizontally, pale brown; expanding keels half as long as the valves, ending abruptly, without an awn or membrane at the tip, light or dark brown; cells deep; cell-wings brownish; tubercles pale brown or whitish. Seeds ¾-line long, somewhat D-shaped in outline, but at the same time wedge-shaped, like a segment of an Orange, tuberculate on the back but not on the sides, brown.

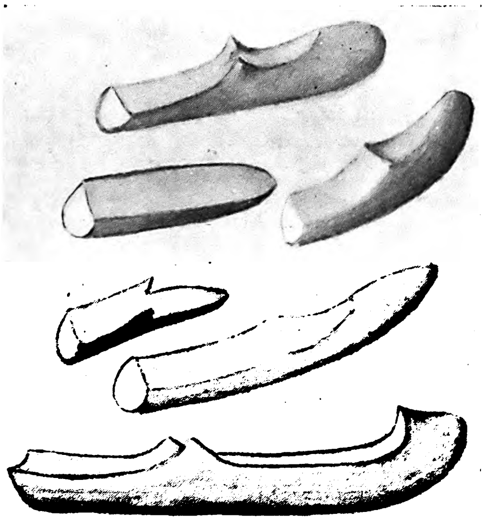


FIG. 186.—GLOTTIPHYLLUM SEMICYLINDRICUM.

Apical part of five leaves, all from one plant, the long lower leaf from a fellow seedling; all natural size. Flowers pedicillate.

Mesembryanthemum semicylindricum, Haw. *Obs.*, p. 238 (1795), *Misc. Nat.*, p. 86, *Syn. Pl. Succ.*, p. 225, and *Rev. Pl. Succ.* p. 103; Salm Dyck, *Mes.* §7, f. 2; Berger, *Mes. und Port.* p. 232. Founded upon M. foliis difformebus, Dillen. *Hort. Elth.*, p. 252, t. 194, f. 241, which is a reduced figure of the plant. Plukenet, *Almagestum*, t. 325, f. 4, M. difforme, Linn. *Sp. Pl.*, ed. 1, p. 487 partly; Salm Dyck, *Mes.* §7, f. 3; Berger, *Mes. und Port.*, p. 233, M. bidentatum, Haw. *Suppl. Pl. Succ.*, p. 89 (1819), and *Rev. Pl. Succ.*, p. 103; Salm Dyck, *Mes* §7, f. 1; Berger, *Mes. und Port.* p. 231, f. 49, copied from Salm Dyck; N. E. Br. in *Journ. Linn. Soc. Bot.* Vol. XLV, p. 125. M. bigibberatum, Haw., in *Phil Mag.*, 1826, p. 328 (not p. 338 as I previously quoted, nor 1824, p. 329, as quoted in *Index Kewensis*); Salm Dyck, *Mes.* §7, f. 4; Berger, *Mes. und Port.*, p. 233.

Jansenville Division: Mount Stewart, Pole Evans, 5579! This was in cultivation before 1732.

This is one of the oldest known species in cultivation, and seems to vary very considerably in the size and shape of its leaves, as indicated in Fig. 186. In my previous account of it I was under the impression that the plant figured by Salm Dyck under the names M. semicylindricum, M. difforme and M. bigibberatum represented a different species; but in taking this view I was wrong, for last year my plant of G. semicylindricum produced leaves typical of that species and others like those of the plant Salm Dyck has figured under those three names, for as I have previously stated, those different three figures might all have been drawn from the very same individual in different years.

There can, I think, be no question that M. semicylindricum, M. bidentatum and M. bigibberatum are specifically identical, but whether this species is really distinct from G. difforme is a point that has yet to be conclusively decided. I have never seen G. difforme, as it appears to have died out of cultivation, and from the descriptions of it the only character that appears to distinguish it from G. semicylindricum is that the pedicel is shorter and quadrangular; when re-discovered possibly other characters may be found.

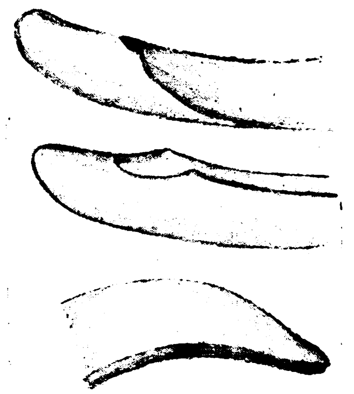


FIG. 187.—GLOTTIPHYLLUM SUBDITUM.

Leaves, adapted from Salm Dyck, Flowers pedicillate.

My drawing (Fig. 186) represents the upper part of five leaves, all from the same plant, and part of one leaf (the long, lower one) from another plant raised from seed out of the same seed-pod as that bearing the other five leaves.

4. G. subditum, N. E. Br. (Fig. 187).—Leaves unequal, the pairs obliquely crossing one another, 1½-3 inches long, 4–5 lines broad, and 3–3½ lines thick, the larger leaf of a pair slightly concave above, very convex on the back, the shorter of each pair acute, and the longer prolonged beyond the ridge at the end of the flat part of the face into a compressed and keeled blunt point ½–¾ inch long, which is slightly incurved, and both leaves are usually curved edgeways to one side, green, pullicid-dotted. Pedicel 5–7 lines long. Calyx compressed, 3-angled, 4-lobed, with the two longer lobes keeled and ciliate on the keel, and the two shorter lobes with membranous margins. Corolla 2–2½ inches in diameter; petals in 1–2 series, linear, very obtuse and minutely toothed at the apex. Stamens yellow. Stigmas 10, short, plumose, yellowish.

Mesembryanthemum praepingue, Salm Dyck, *Mes.*, §7, Fig. 5, Berger, *Mes. und Port.*, p. 237, and all other modern authors, but not of Haworth.

Fig. 187 represents the apical portion of two of the large and one of the smaller leaves of each pair, adapted from Salm Dyck's figure, about natural size.

5. G. cruciatum, N. E. Br. in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9 (Fig. 188).—Leaves usually pointing four ways, from the pairs obliquely crossing one another, 2½–3 inches long, 7–8 lines broad, dilating to 1 inch broad at the very base, curved upwards edgeways, flat or lightly convex, especially near the base on the upper surface, convex on the back, and one leaf of a pair produced beyond the flat surface into a stout compressed and keeled blunt point, often more or less incurved and slightly oblique or twisted, very stout, succulent and soft to the touch, green, with roundish pellucid dots of various sizes. Pedicels about 9–10 lines long and 3 lines or more thick, very stout, subterete but somewhat 2-edged, of equal thickness throughout. Calyx large, 4-lobed; the two outer lobes shorter than the inner, keeled, with thin edges and blunt points; the two inner longer, very broadly membranous, not keeled. Corolla scarcely as large as that of G. difforme, ex Haworth, but according to Salm Dyck's figure nearly 2½ inches in diameter; petals "not quite so long as those of G. difforme, but broader," ex Haworth, and according to Salm Dyck's figure in 2 series, about 11 lines long and nearly 2 lines broad, obtusely pointed or subacute. Stamens very numerous, short, spreading, yellow. Stigmas 8–9. Capsule small for the size of the plant, tapering downwards, with a hollow or navel at the top, with 8–9 grooved ridges on the top, and with 8–9 valves and cells.

Mesembryanthemum cruciatum, Haw. *Obs.*, p. 173 (1795), *Misc. Nat.*, 35, *Synop. Pl. Succ.*, p. 224, and *Rev. Pl. Succ.*, 100; Salm Dyck, *Mes.*, §8, f. 9 (but not §7, f. 7), not of Berger.

South Africa: Locality unknown; introduced by Masson in 1792, according to Aiton, and if Haworth is right in identifying it with a plant described by Boerhaave it was in cultivation before 1720.

I have not seen this plant. The above description of it is made partly from that of Haworth, partly from an original drawing of the type plant at Kew, which Aiton caused to be made of it,[*] and partly from Salm Dyck's figure of it. This plate (§8, f. 9) is contained in the Kew collection of drawings, and Fig. 188 is adapted from it, but is missing from some, perhaps most, copies of the book, which is unfortunate, as it undoubtedly represents the true M. cruciatum of Haworth, while the plant Salm Dyck also figures as M. cruciatum at §7 f. 7 is not at all the same species, differing in its leaves and and much this more slender pedicel. I have described this latter plant as G. longipes. *N. E. Brown.*

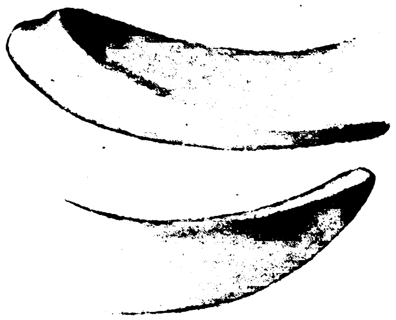


FIG. 188.—GLOTTIPHYLLUM CRUCIATUM.

Pair of leaves, adapted from Salm Dyck. Flowers pedicillate.

(*To be continued.*)

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[*] The drawings preserved at Kew of the type plants of Mesembryanthemum and other genera that were described by Haworth and other authors, were made under the direction of W. T. Aiton, then Director of Kew Gardens, and Haworth evidently knew that they were being made, and undoubtedly alluded to them under M. canum, in his *Miscellanea Naturalia*, p. 26 (1803).

PREPARING SOIL FOR CROPS.

Tillage operations are of constant recurrence in garden work, their object being two-fold, *i.e.*, to get rid of weeds—which means surface cultivation only, and may be considered as summer routine work—and the pulverisation of the soil to fit it to sustain the plants cultivated for their produce.

At the present season of the year the latter problem, entailing the operations of digging and trenching, with a view to the opening up and pulverisation of the soil to facilitate the preparation of good seed beds and ensure the wide ramifications of roots during the next season of growth, embraces a considerable portion of routine garden work. That deep tillage is of the greatest benefit on all types of soils and an important factor in crop-production is well recognised, and it may be interesting to consider some of the principles which govern this fact.

Deep tillage acts in a marked degree on the drainage by increasing the porosity of the subsoil and allowing the free passage of water to the drains below. It increases to an enormous extent the medium for the ramification of roots in their search for nourishment and thus facilitates feeding over a wide area instead of in a confined space. It allows air to come into contact with a much greater bulk of soil, and exercise its power of decomposing the organic matter in it, which exerts such a powerful chemical as well as mechanical action. A combination of these factors enables us to gain the fullest advantages from the manures we apply to our soils, for the variety of their constituents, consisting of organic and inorganic substances, minerals and salts, would be in a better state to co-operate with any ingredients in the manure used. Physical culture always induces root action, and it is obvious that the greater the root-surface the greater chance the plant has of absorbing what nutriment there is. It also makes easy the thorough incorporation of added manures, without which much of their value is lost. Further, its importance as an aid to chemical action cannot be over-emphasised. The well-known chemical law laid down by Berthollet and Jungfleisch, states that "The rate of chemical action is dependent upon the active mass of the reacting constituents." In the case of the plant drawing its nutriment from the soil, the active mass of one constituent is the number of root tips to the plant; that of the other, the amount of nutriment in direct contact with the root-tips.

It is thus clear that the problems of tillage and manuring are intimately related, and that it is impossible to separate them in practice, for the chemical and biological changes which must take place in any soil before its constituents can be rendered available for absorption by the root-hairs of the plant, can only proceed satisfactorily when the soil is in a correct physical condition. It may be noted that although manuring now implies the adding of substances to the soil, it originally meant man-oeuvre—to work by hand—and implied only physical culture of the soil, and it is not difficult to imagine that on some soils physical development is even more important than adding manures.

But with an average soil, under a system of intensive cultivation for the production of maximum crops, it is necessary to add manures as well as to physically prepare the soil, and the question naturally arises, how far can one apply manure to the soil in the course of winter tillage without fear of losing its value before the subsequent crops are ready to profit by it? To some extent this depends on the type of soil, for although all ordinary soils possess the power of absorbing organic matter and various chemical compounds from substances applied as manure, the stiffer soils appear to be more effectual absorbents than the sandy ones, hence there is less liability to losses from washing out. Further, light, sandy soils are naturally warmer than heavy, clay land, and as temperature plays an important part in nitrification, this might lead to losses in the light soil which would not occur in the heavy soil.

It would thus appear that, broadly, the time between the tilling and manuring and the sowing or planting of the next crop may be more in the case of heavy soils than on light soils, and, while it would be good practice to prepare heavy soils during autumn and early winter months, before heavy winter rains increase the mechanical difficulties of tillage, it would be more advantageous to allow an uncropped light soil to grow its natural weeds (or where practicable a green manure crop), so long as growth is active, and defer tillage and manuring operations until mid-winter.

Generally speaking, the manures which are added to soils during winter tillage are of the bulky type, such as farmyard, stable and garden refuse manures. As already noted, the more thoroughly these are distributed through the total soil which is to form the rooting medium of the crop to be grown, the better able are they to nourish the plant as their constituents become available. All these manures are largely composed of cellulosic matter and in such manures nitrogen is the most important element, although they also contain phosphorus and potash and serve as complete plant foods. They should always undergo sufficient fermentation in the heap to break down cellulosic matter before application to the soil, as raw carbohydrates dug into the soil have a deleterious effect on the next crop. Their action is comparatively slow, especially at low temperatures, and they are thus eminently suitable for application to the soil during autumn and winter tillage. Shoddy and feathers can also be dug in during the dormant season, their action being similar to the foregoing.

If it is contemplated to enrich soils in course of preparation by the addition of artificial manures only, and on some soils this is quite practicable, the application of quick-acting manures would naturally be deferred until immediately before or during the period of active growth, but such slow-acting manures as basic slag and kainit should be applied during autumn and early winter, where the use of them is desirable. *W. Auton.*

MARKET FRUIT GARDEN.

It was in keeping with this extraordinary season that October, usually one of the wettest months of the year, should have been amongst the driest. Its rainfall of 1·90 inch was not much more than half the average, and was less than that of any preceding month, except April and May. There was actually a period of nineteen consecutive days without rain. For work on the fruit farm the fine weather was, of course, invaluable. All hands were engaged in picking, packing, and storing Apples and only a few Allington Pippins, the last to be gathered, were left on the trees at the end of the month. All available storage room was filled with Bramley's Seedling. The fruit-store proper was quite inadequate for the heavy crop of this variety, so spaces in some of the buildings were, partitioned off and filled with Apples to a depth of about three feet, the heaps being covered with a layer of straw. The fruit keeps well like this, but the plan is not ideal, because a certain amount of marking and bruising is inevitable. I am informed, however, that there is a distinct shortage of Bramley's Seedling this season, so the variety should pay for storage.

Why Plant Cooking Apples?

This has been a good season for selling anything of high quality in the way of dessert Apples, but a bad one for selling even good samples of cooking Apples. There is no doubt that the proportion of cooking varieties is too great on most fruit farms. I grow about sixty per cent. of dessert Apples, which is probably a good deal more than is commonly found; but even then I have too much ground devoted to such kinds as Lord Grosvenor, Queen, Lord Derby and, worse still, Early Julyan and Domino. Such kinds are almost invariably cheap, and in many seasons they are probably grown at a loss. Even when it comes to a high-class cooking variety like Lane's Prince Albert, results are none too encouraging. I did not receive more than 6s. per bushel for the best grade of this Apple; and the return per acre was poor compared with that secured even for the despised Worcester Pearmain, in spite of the much heavier yield given by Lane's Prince Albert. Over a series of years, the comparison would be still more favourable to Worcester Pearmain, because it is very regular in bearing, whilst Lane's Prince Albert is one of the most pronounced biennial croppers.

Dessert Apples, if well coloured, free from scab, and properly graded and packed, are always saleable, and they are well able to compete with any imported Apples. The boxed Cox's Orange Pippins now coming into the country from more than one source, are making just about half what I realised for my own boxed Apples of this variety. If only we had one or two good late varieties, I think we could compete throughout the winter with the imported fruit which now holds undisputed possession of our markets at that time. Even with our present range of market varieties, intending planters would do well to restrict the cooking kinds to a few very early and late. Amongst the latter, Bramley's Seedling stands supreme. In the estimation of the public it ranks first amongst cooking Apples, just as Cox's Orange Pippin does amongst dessert sorts. No imported Apple competes with it at all seriously. It has, however, been so widely planted in recent years that storage is almost essential if the highest prices are to be secured. Quite a number of growers have installed cold storage plant mainly with the object of holding this variety until March or April.

Possible Market Apples.

The need for increasing the number of dessert varieties of Apples grown for market was the subject of a very interesting paper read by Mr. F. Paget Norbury at the conference of growers, held in connection with the recent Imperial Fruit Show. To illustrate his paper, Mr. Norbury had staged a very interesting collection of Apples, old and new varieties, which had been suggested to him as possibly possessing market qualifications. Amongst these, the one which probably attracted most attention was Paroquet, one of the late Mr. Charles Ross's introductions. This has the great merit of being an entirely red Apple, the brilliant appearance of which would be quite enough to sell it. Unfortunately, the flavour is said to be poor. Important as colour is, it would be a mistake for growers to adopt any variety which is not of good quality, for the public are certainly becoming more critical. Many, nowadays, will not buy Worcester Pearmain, and have learned at last to recognise the superior quality of James Grieve, which at one time was difficult to sell.

Two other Apples of very striking appearance in the collection were amongst several sent from Wisley. One of these, George Carpenter, is a new variety, a cross between King of the Pippins and Peasgood's Nonesuch, I believe. The single specimen shown was of good medium size and most attractive colour, the shape being flat-round. If this Apple crops well and is of good flavour it should make an excellent market variety. The other kind was Reinette Rouge Etoilee, a small- to medium-sized fruit of perfect flattened-round shape, coloured carmine with prominent white dots. Nothing more attractive-looking could be imagined, the fruit having a delicate, waxy appearance. I have seen this Apple before in collections, and at one time was keen to plant it; but I was told that it was apt to come too small, and that it is not of very good quality. Unfortunately, quality and fine appearance seldom go together in Apples.

In this collection were Ellison's Orange and Laxton's Supreme, both varieties of good quality which are being planted by market growers. Neither, in my opinion, has enough colour to make it worth serious consideration. What is wanted is a late Apple of brilliant appearance to rival Jonathan and McIntosh Red. It is sometimes said that colour is not of great importance, Newtown Pippin being cited as an example of a greenish-yellow Apple which is first favourite with the public. But Newtown Pippin has a waxy, sweet appearance, quite different from that of a poorly-coloured English Apple, which suggests sourness. I find that, with the market varieties we already possess, high colour adds about fifty per cent. to their selling value.

Vigour in Fruit Trees.

I have suggested before in these notes that it is difficult to decide how much vigour is desirable in fruit trees. I mean that it is not easy to say, when looking at the trees, whether they require manure or not. This season, on my place, what might well be considered to be under-vigorous trees have undoubtedly scored, so far as Apples are concerned. These gave fruits of medium size with clear skin and high colour. This was most striking in the case of Worcester Pearmain and Allington Pippin, the fruit of which was too large and lacking in colour from the more vigorous trees. In a dry season the position would probably be reversed. I think, however, that it is desirable not to get dessert Apples too vigorous. Cooking Apples, on the contrary, cannot be too large; and colour is not very important in their case.

I am inclined to think that, with dessert varieties, so long as there is just sufficient movement to ensure spur development, actual shoot growth is not a matter of importance, except of course, in a young tree. Growers who run pigs under their trees have found, in some cases, that this can be overdone. Where they used to keep the pigs on the ground all the year round, they are now running them for short periods only. I have seen one plantation in which duck-keeping has been carried to excess, with the result that the fruits were of very poor colour this season. The best results from pig and poultry keeping are to be seen in Plum plantations, which can hardly be too vigorous. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante pp. 131–137).

(*Continued from p.* 391.)

WALES.

Carnarvonshire.—The fruit crops generally are a good average here. April and May being such dry months, the crops suffered badly. June was very wet and cold, and what promised to be a good crop of Strawberries was ruined by the wet. Cherries stoned badly after flowering profusely. *J. E. Higgins, Glynllivon Gardens, Llanwnda.*

Denbighshire.—Although Apples promised a good crop and appeared to be swelling freely, the final results are most disappointing, as many of the fruits have fallen badly, especially the varieties Cox's Orange Pippin and Ribston Pippin, which is doubtless due to the cold nights, heavy rains and sunless days, practically the whole of June being of this nature. Strawberries, although good, suffered to a very great extent from the constant and heavy rains, and many of the fruits rotted. The rainfall here for the month of June was 4·30 inches. Many of the plants show signs of deterioration. Black, White and Red Currants, bore heavy crops of good fruits, and Gooseberries also carried excellent crops. Raspberries had a heavy crop, the fruits swelling to an enormous size. The soil, generally, is of a retentive nature. *R. H. Crockford, Horsley Hall Gardens, Gresford.*

——The fruit crops in this district vary considerably. In these gardens we have an average crop of Apples, our heaviest cropping varieties being Bramley's Seedling, Lane's Prince Albert, Red Victoria and King of the Pippins. Pears are scarce but in a garden two miles distant they are plentiful. Plums were a failure, but small fruits were plentiful. Strawberries were an excellent crop, but owing to continuous rains one-half of the crop was not fit for use. The soil in this district varies from stiff marl in these gardens to gravel a short distance away. The best crop of Pears is on the gravelly soil, and the best Strawberries were on the marl. *J. A. Jones, Chirk Castle Gardens, Chirk, Near Wrexham.*

——Apples carry an average crop of clean fruits; James Grieve, Cellini and Mère de Ménage are very heavily cropped, while Cox's Orange Pippin and Bramley's Seedling are lightly cropped. Court Pendû Plat is a failure. Pears carried a fine display of bloom, but some varieties which set well shed their fruits. Plums looked promising but carried a light crop; Cherries were good, but Peaches, Nectarines and Apricots failed to give an average yield. Black, Red and White Currants carried heavy crops, as did Gooseberries, Raspberries and Loganberries. Strawberries gave good fruits, but the showery weather spoiled many of them. The soil here is very light and shallow and on a sandy subsoil. *S. J. Robbins, Cafn Park Gardens, Wrexham.*

——Although we did not suffer from such severe frosts as were experienced in many parts of the country during the flowering period, the cold winds and dull weather did much harm, with the result that our fruit crops are light. Small fruits gave the best crops; Strawberries promised well, but continual rain and lack of sun caused many fruits to rot. *F. C. Puddle, Bodnant Gardens, Taly-Cafn.*

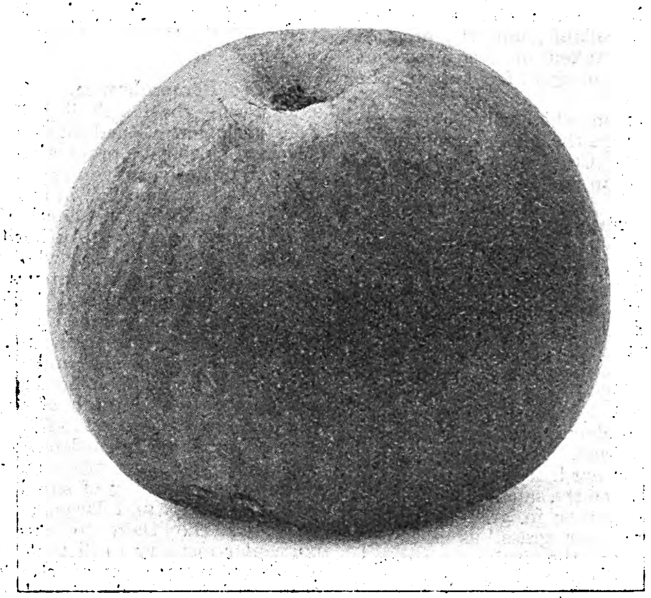

FIG. 189.—APPLE SALTCOTE PIPPIN.

Flintshire.—Apples are finer than for several years past, most varieties bearing very well, excepting Cox's Orange Pippin. Plums were good and the foliage perfect, after being sprayed during winter with Carbokrimp. Pears are a light crop, after a fine show of blossom. Apricots cropped moderately and the trees are healthy, as plenty of rain suits them. Cherries were good, especially the Sweet varieties. Black Currants were splendid and free from aphis. Gooseberries also cropped well. Outside Peaches were good this year, but the trees were badly attacked by Peach blister. Peaches under glass set very freely and carried heavy crops. The Strawberry crop was very good, but the fruits lacked flavour. Damsons have cropped well. The soil here is on clay and suitable for fruits. *Wm. G. Rolfe, Gredington Gardens, Whitchurch.*

——Apples are a fair crop along the sea-board, but inland the crop is poor. The same remark applies to Pears, but the quality of the fruits is good. Plums were a poor crop everywhere, and Damsons conspicuous by their absence. Cherries were plentiful in walled gardens along the coast and the fruits of good quality. Peaches and Nectarines gave a poor crop and the quality left much to be desired. Small fruits were about the average and of good quality. Strawberries were a poor crop and small. The frosts of April 28 and 29, and of May 26 and 27 proved disastrous to fruits in all places except along the shore, where the crops are very good in quality, but not up to the average. One would expect aphides and other insect pests to be troublesome in a season such as this, but the fact is they are fewer, and there are very few caterpillars. I have only seen one case of Gooseberry sawfly this year. *Harry E. Jones, County Education Offices, Mold.*

——There was an abundance of blossom on all fruit trees, but owing to the east winds and frosts experienced here on the last nights of April and early May, there was a poor set of Plums and early Apples. Currants and Raspberries have carried exceptionally heavy crops. Strawberries set their fruits well and would have given a good crop, but owing to heavy rains and sunless days during June they failed to ripen, and all the best fruits were destroyed by slugs. *J. L. Eversfield, Penbedw Hall Gardens, Nannerch.*

(*To be continued*).

FRUIT REGISTER.

APPLE SALTCOTE PIPPIN.

Having examined specimens of the above-named Apple, I predict a fine future for its pretty and shapely fruits. Specimens were presented for inspection at the meeting of the Royal Horticultural Society on October 11.

Mr. Herbert Chapman informed me the tree was selected from a number of seedlings, grown by an old man employed by him, from pips of Ribston Pippin. The shape of Saltcote Pippin reminds one of Allington Pippin (Fig. 189; see also p. 373). The season of this Apple appears to be round about Christmas time, and although we have a number of varieties in use then, Saltcote Pippin will, I feel sure, be in great demand when better known. The trees of this variety are very productive. I understand from Mr. Chapman that the variety is suitable alike for cultivation as a bush or standard. *Pomona.*

PLUM WYEDALE.

For many years past this Plum has formed a welcome addition to our list of cooking fruits in the early days of November. Twenty years ago, Messrs. Bunyard and Co. catalogued and described it as the "latest of all." Since then I have tested it against many others, and the results bear out their statement. The tree is, perhaps, a little shy in bearing when young, but if grown on a wall and the branches are trained out at a distance of twelve inches apart, and spur-pruned in the usual way, it bears regularly even on a west aspect. The fruit is very handsome, oval, rich blue, and carries a good "bloom," an average specimen weighing about one-and-a-half ounce, just the size most favoured by the cook. The flesh is firm and agreeably acid, the juice when cooked being a deep wine-red. Altogether, it is quite a good cooking Plum, but it is the fact that in most years a dish may be gathered on Guy Fawkes' Day that makes it really valuable. *J. Comber.*

COLOUR IN APPLES.

Colour is of the utmost importance in fruits, particularly in dessert Apples. Nothing is more attractive than nicely coloured fruits. Soil, will certainly, to a great extent, influence the amount of colour in Apples; but the colour factor is largely controllable, and the greatest advantage should be taken of the means at hand to increase the amount of colour in the different varieties.

The type of stock on which the Apples are grown has a bearing upon the colour of the fruits. Apples grown on the Crab stock are usually less highly coloured than are Apples on Paradise stock.

Apples grown on grass land are often much more highly coloured than are those grown on cultivated land. The drawback to this method of adding to the colour of the fruits is that unless the trees are comparatively old the quantity and size of the fruits will suffer. By digging annually round the base of the trees, however, the trees may be kept productive and the colouring effect of the grass may be very largely preserved.

Poultry in an orchard add considerably to the colour of the fruit. If a hundred fowls are given an acre of orchard, the effect upon the colour of the fruits will be the same as if the trees had been grown altogether in grass. Poultry have the advantage over grass, as although the colouring effect on the fruits is similar, the fruits are not liable to deteriorate, but the manure will improve the quality and size of the Apples. Fifty fowls to an acre will be sufficient to colour the fruits well, but not sufficient to keep down rubbish.

Ducks and geese have a similar effect to fowls in the orchard, so far as the colour of the fruits is concerned, and are quite as good at keeping down rubbish, although where any quantity is kept the land is apt to become much more messy than with fowls.

Apples on the shady side of a tree often lack colour, while those on the sunny side are well coloured. Assistance may be given to the fruits on the shady side by removing a few leaves from just round them so that a certain amount of sun may reach them

Needless to say, overcrowded branches should be removed when pruning, otherwise these will have the same effect in preventing colouring as do the leaves which shade the fruits.

There is strong reason to believe that colour is improved by regrafting, because when trees have been headed back and regrafted with coloured dessert varieties, the colour of the fruits produced on such trees is mostly excellent, often being superior to that on trees of the same variety previously growing on the land but which have not been regrafted.

As so many of the factors necessary for the improvement of colour in Apples are controllable it is possible, even on unsuitable soils, to ensure that reasonably well-coloured fruits are produced. Every effort should be made to do so, as the advantages, both from the point of view of attractiveness on the table and in the market, are so considerable. *J. W. Morton, March.*

HOME CORRESPONDENCE.

Blue Tits.—In further reference to the question of the Blue Tit, which I see has been discussed in *The Gardeners' Chronicle*, may I quote briefly from the report on the food of the bird in Dr. Walter E. Collinge's valuable work, *The Food of some British Birds* (1926) ? (p. 126) "Of the total food consumed in a year seventy-eight per cent. is beneficial, twelve per cent. neutral, and ten per cent. injurious." (p. 128) "In spite of all that has been chronicled against the bird, the sum total of its activities is distinctly beneficial. The harm it does is comparatively insignificant when compared with the great benefits it confers, and all who foster or aid in its destruction are doing a serious injury both to themselves and to fruit-growers in general." *L. Gardiner, Secretary, Royal Society for the Protection of Birds.*

Superphosphate and Peas.—I should like to warn readers against sprinkling superphosphate along the rows when sowing Peas (as advocated by Mr. Copley, on page 252), as my experience is that many of the seeds will rot if they come into direct contact with the manure. Superphosphate is very slow in action, and to obtain full benefit from its use it should be forked into the soil in winter, after digging. *Grigor Roy, The Gardens, Stoke D'Abernon Manor, Cobham, Surrey.*

Roads of Remembrance.—Would you be so good as to permit the hospitality of your columns for brief outline of a Roads of Remembrance scheme which will interest a proportion of readers belonging to organisations of young people, and especially, we hope, those who live in crowded homes without a garden. With the sanction of both Ministry of Transport and Local Authority, and with the guidance of volunteers who are professional gardeners or expert amateurs they could, by work on Saturdays and holidays, transform into gardens many grass plots of manageable size along each side of the new arterial roads. The choicest flowers and foliage produced under rivalry could be placed round the cenotaph or upon statue or tomb of any national hero whom it may be desired to honour. The favourites of an English garden need no advocacy, but as the claim of trees may be overlooked, we urge the planting of small trees for blossom, foliage, fruit; and large, slow-growing trees, especially the Oak, to carry forward some particular memory to distant time without fear of outrage to any canon of art. What boy who has been cuffed and threatened on suspicion of robbing an orchard would not wish to help in planting along the road miles of Apple, Plum, Pear and Cherry trees ? And what person could fail to respond to the beauty of these trees in spring ? Beyond formal planting it would be pleasing to scatter the seeds of wild flowers which give most delight, and which, therefore, have such desperate struggle to propagate and survive. Should incidental expenses for travel, tools, plants, trees prove an obstacle to company of poor boys or girls, doubtless these could be met by grants from a central fund, the establishment of which would be fitly considered by a conference called to consider the adornment of arterial roads in the service of the cenotaph and also of other heroes, as channels for the enthusiasm, instruction and health of young people and any of their leaders who may wish to participate. *Richard Rigg (Chairman), Roads of Remembrance Asociation,* 47, *Victoria Street, S.W.*1.

Two good Thymes for the Rock Garden.—Of distinctive appearance amongst the rock garden Thymes is Thymus erectus. This forms a compact little bush, from six inches to twelve inches tall, all the growths being perfectly upright. The stems, which are woody, bear whorls of small, sweetly-scented leaves, and in late summer produce small, white flowers near the tip. T. Herba-barona, a native of Corsica, is unique in having a distinct scent of Caraway and to those who like this it may be recommended. It forms a low-growing clump and bears purplish flowers. *L. T., Maidenhead.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 15.—There was a bright and interesting show in connection with the fortnightly meeting of the Royal Horticultural Society at Vincent Square. The general floral exhibits included Chrysanthemums in quantity, Carnations, hardy trees and shrubs, and a particularly good collection of winter-flowering Begonias. The Floral Committee recommended six Awards of Merit to novelties. Orchids were shown more extensively than a fortnight ago. There were several very attractive collections and the Committee recommended one First Class Certificate and four Awards of Merit to novelties. Half-a-dozen or so seedling Apples were submitted to the Fruit and Vegetable Committee, but none was considered to be superior to the older varieties. The exhibits in the hall included an admirable collection of Potatos and several good collections of Apples.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Secretary), Mr. Stuart H. Low, Mr. E. R. Ashton, Mr. Robert Paterson, Mr. John C. Cowan, Mr. J. E. Shill, Mr. Fred K. Sander, Mr. H. G. Alexander, Mr. Arthur Dye, Mr. T. Armstrong, Mr. Frederick J. Hanbury and Mr. Charles H. Curtis.

First Class Certificate.

Cypripedium Chardmoore var. Mrs. Cowburn.—A grand Cypripedium of wonderful size. The big, rounded, dorsal sepal is white, with a green base, and the sepals and lip are light Apple-green, with brown veinings. Shown by Messrs. Armstrong and Brown.

Awards of Merit.

Laelio-Cattleya Ishtar (L.-C. Sargon × C. Fabia).—A very handsome hybrid with large, shapely flowers in which the sepals and petals are purplish-mauve and the rounded, frilled lip is purple, with ruby-crimson shading near the golden-veined throat. Shown by Messrs. H. G. Alexander, Ltd.

Laelio-Cattleya Yukon var. Unique (L.-C. Schneideri × C. Mrs. Pitt.)—A pretty and very distinct hybrid with flowers of medium size and bright colour. The sepals and petals are vivid cerise, and the lip is similarly coloured at the wonderfully frilled apex, while the side lobes and throat are orange-yellow, and there are orange-red markings under the yellow column. Shown by Messrs. Sanders.

Brasso-Cattleya Vilmoriniana, Brockhurst var. (Cattleya Mossiae var. Sunset × B.-C. Mrs. J. Leemann).—A big flower, with broad petals and less broad sepals of deep mauve colour. The huge lip is prettily fringed, mauve, with a large, shaded, dull orange area. Shown by Frederick J. Hanbury, Esq. (gr. Mr. Farnes), Brockhurst, East Grinstead.

Cypripedium Perseus, Stonehurst var.—A bold flower with a rounded, white dorsal sepal that is shaded with green over the central area and marked with dark purple lines and spots. The petals and lip are green, shaded with purplish-brown, the former having a central band of brownish-purple. Shown by Robert Paterson, Esq., Stonehurst, Sussex.

Groups.

Mrs. S. Brown (gr. Mr. Thurgood), Brownlands, Shepperton, showed a pleasing group of Orchids wherein were good examples of Lycaste Imschootiana with thirteen flowers (Cultural Commendation); Oncidium bicallosum, Vanda coerulea, Cattleya Ariel, with a dense spike of purple flowers; Oncidium varicosum Rogersii, Epidendrum vitellinum majus, Cymbidium Hanburyanum, and several Odontoglossums and Miltonias.

Cattleya Mrs. Gratrix, with lovely white flowers; C. Aeneas, gold and ruby coloured; Brasso-Cattleya British Queen and Laelio-Cattleya Cynthia alba were well shown, by Messrs. Cowan and Co., together with a very fine selection of Cypripediums, including C. Cavalier, C. Bedfordiae, C. Eurybiades var. Monarch, C. Nydia, C. Christopher var. Grand Duke Nicholas, and C. Ponticus. A very fine Odontoglossum crispum was also shown in this group.

In Messrs. Stuart Low and Co.'s group of Orchids, a specimen of Vanda coerulea carried six spikes of pale blue flowers, and there were some capital spikes of Odontoglossums. Cattleya Tityus, Brasso-Laelio-Cattleya Thyone, Brasso-Cattleya Hanibal, Laelio-Cattleya Rhenus, Odontioda Queen Mary, Oncidium Forbesii, Sophro-Cattleya Blackii, and the rare Lycaste leucantha, Calanthe veratrifolia, Epidendrum patens and Oncidium Papilio were well represented.

Messrs. Charlesworth and Co. showed beautiful Odontoglossums and Odontiodas, and fine examples of Odontonia Pittae var. Rosita, with a spike of eight lilac-mauve flowers; Miltonia Beau Brummel var. superbissima, with four ruby flowers; Cynorchis Lowii, Coelogyne Mooreana, with a couple of spikes of its dainty, white flowers; Phalaenopsis Rimestadiana, and the pretty Cypripedium Grace Pitt.

Other Exhibits.

Cattleya Bellona, Brasso-Cattleya Lucida, Cypripedium Maudiae magnifica, and C. Bellona were all well shown by Messrs. J. and A. McBean. Mr. Harry Dixon showed useful Cypripediums, Odontioda Diana and Cymbidium Alexanderi var. roseum. Baron Bruno Schröder (gr. Mr. Shill), Dell Park, Englefield Green, showed flowers of Laelio-Cattleya Aconagua (L.-C. Schröderae × C. Maggie Raphael), a large and beautiful hybrid. Messrs. Black and Flory showed Laelio-Cattleya Edzell.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mrs. E. M. Wightman, Mr. H. J. Jones, Mr. J. M. Bridgeford, Mr. W. H. Page, Mr. Wm. Howe, Mr. Donald Allan, Mr. M. C. Allwood, Mr. E. R. Janes, Mr. D. Ingamells, Mr. Courtney Page, Mr. R. Findlay, Mr. James B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mrs. Helen Lindsay-Smith, Mr. Charles E. Pearson, Mr. G. W. Leak and Mr. W. D. Cartwright (Secretary).

Section B.—Mr. Gerald B. Loder (in the chair), Mr. G. Reuthe, Mr. George Harrow, Mr. A. Bedford, Mr. F. G. Preston, Mr. G. Yeld, Mr. E. H. Wilding, Mr. T. Hay, Mr. Hiatt, C. Baker, Sir William Lawrence, Bt., Mr. Charles T. Musgrave, Mr. W. J. Bean, Mr. R. C. Notcutt, Mr. E. A. Bowles, Mr. W. B. Cranfield, Mr. Mark Fenwick, Mr. C. Williams, Mr. James Hudson, Mr. R. W. Wallace, Mr. C. J. Lucas, Sir Herbert Maxwell, Bt. (visitor), and Mr. N. K. Gould (Secretary).

Awards of Merit.

Acacia Cunninghamii.—Although the seeds were received from Kenya, this is an Australian plant and native of a wide area from central New South Wales to central Queensland. It is the "Kowarkul" of the Queensland aboriginals. Nearly all the Mimosas grow rapidly, but this is an exceptionally robust species, for a four-year-old plant has become about thirty feet high under glass at Exbury. It is a very distinct species and, in addition to being very robust, is exceptionally floriferous. The slender, round stems are covered densely with fine, soft, erect, white hairs. The ovate-acuminate leaves are about one-and-a-half inch long, with a maximum width of an inch on the flowering stems. The leaves are of soft texture, entire, margined with tiny white hairs, and of a pleasing silvery-grey appearance. The fluffy balls of bright canary-yellow flowers are borne in axillary racemes on silvery stalks and are deliciously fragrant. Had the Committee recommended a First Class Certificate, we imagine few would have disagreed. Shown by Lionel de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Southampton.

Carnation Cattleya Mauve.—A large, fragrant, perpetual-flowering variety of bright rosy-mauve colour. On close inspection it is seen that the broad petals are "dusted" with small carmine spots.

Carnation Maud Allwood.—This is a medium-sized Fancy perpetual-flowering Carnation. The general bright orange colour is occasionally replaced by lines of darker colour. There was no appreciable fragrance, but it is a very decorative flower. Both varieties were shown by Messrs. Allwood Brothers.

Chrysanthemum Enid.—This is a bright and attractive medium-sized to large Single. The round, shapely flowers are made up of broad, bright chestnut-terra-cotta florets. Shown by Mr. H. Shoesmith, Junr.

Chrysanthemum Mrs. E. H. Pearce.—This exhibition Japanese variety will be valued by those who desire very large blooms, for they are of immense size. The broad, incurving, pale ivory-white florets are lightly tinted with green. Shown by Mr. E. H. Pearce, Long Sutton Gardens, Basingstoke.

Chrysanthemum Elsie Crook.—A large Single with several rows of broad florets which reflex attractively at the tips. The colour is an uncommon, deep-cream shade, with a suggestion of peach-pink at the base of the florets. Shown by Mr. G. Carpenter, West Hall Gardens, Byfleet.

Groups.

Mrs. Sofer Whitburn (gr. Mr. A. S. Gooden), Amport St. Mary's, Andover, set up a large collection of especially well-grown plants of a number of varieties of winter-flowering Begonias. The principal varieties were Pink Perfection, semi-double flowers of bright colour; Empress, double, light scarlet; Elatior, rosy-crimson; Eclipse, rose-pink; Dazzler, rich crimson; Matchless, pink; Her Majesty, salmon; and Optima, pale salmon.

A very extensive collection of sprays of trees and shrubs, mostly berried species, of especial value for late autumn and early winter effect, was contributed by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree. In addition to many Berberises, Pyruses and Pernettyas, there was a fairly complete selection of the most decorative varieties of Euonymus europeaus, which had especially decorative fruits. The less common items of this large exhibit included the following:—Hymenanthera crassifolia, which has whitish fruits studded along sturdy stems; Viburnum Opulus xanthocarpus, bearing plentiful bunches of shining yellow fruits; Celastrus acuminatus, with its Spindle Tree-like fruits showing scarlet arils; Ruscus aculeatus hermaphroditus, with large, reddish-purple fruits; Billardiera longifolia, of slender habit and bearing large, blue-purple fruits; and Cydonia japonica Wilsonii, which had very large Quince-like fruits. Flowers were provided by a large bush of Viburnum fragrans, sprays of Jasminum nudicaule, various Ericas and Cydonia japonica Knap Hill Scarlet, which was also accompanied by fruits. Although not yet in flower, the purplish catkins of Alnus occidentalis were highly decorative.

A large floor group of young Coniferous trees and shrubs, arranged by Mr. G. Reuthe, was full of interest to the many lovers of these interesting subjects. Many genera were represented by well-grown examples, and in addition to a good selection of Mexican Pines, Piceas, Abies, Cupressus and Tsugas, especially the elegant T. Brunoniana, there were small plants of the more tender and lesser-known genera. The last-named included Dacrydium cupressinum, Athrotaxis cupressoides, Agathis australis, and Taiwania cryptomerioides. At one end of this admirable exhibit there were a few pots of Nerines in good varieties.

A small, but attractive exhibit, arranged by Messrs. L. R. Russell, Ltd., included many well-berried bushes of Skimmia fragrans, Tree Ivies, Pyracantha Lalandei and other ornamental shrubs. Mr. John Klinkert had a good collection of topiary specimens in evergreen Box.

Mr. F. G. Wood planted a pleasing, low rockery chiefly with grey-foliaged plants which included Raoulia australis, Othonnopsis cheirifolius, Teucrium aureum and Cineraria maritima. In his small rock garden exhibit Mr. G. G. Whitelegg planted goodly patches of Primula pterocephala and Gentiana sino-ornata. Miss Gladys Howe had miniature rock gardens, and the Misses Hopkins had a small rock garden. Messrs. Isaac House and Son continued their exhibits of Scabiosa caucasica varieties and also showed several plants of the blue-flowered Aster grandiflorus.

Chrysanthemums were shown in quantity and of very good quality. Mr. H. J. Jones had a very large exhibit of admirable blooms of many types. The exhibition Japanese varieties included excellent blooms of General Petain, Majestic, Mrs. J. S. Kelly, Mrs. R. C. Pulling, Victory, Louisa Pockett, the new rich yellow Charles Davis (1927), and Lady Young, of bright purple colour. Chief amongst the Singles were Delightful, Hon. Edith Smith, West Hall Gem and Mrs. F. Boill. The market-sized varieties were represented by E. Reeves, Monument and Cullingfordii, of rich crimson colour. There were also several vases of the dainty little Pompon varieties, such as Pygmalion, rose pink; Mary Pickford, white; Baby Doll, pale yellow, and Golden Climax.

In an attractive collection Messrs. Keith Luxford and Co. showed good blooms of Louisa Pockett, J. Symonds and several good seedlings of the exhibition Japanese sorts. They also staged a vase of very attractive Anemone seedlings and a good selection of Singles. Mr. A. G. Vinten set up a collection of medium-sized varieties, such as Ondine, Enton Sun, Golden Marvel and Captain Fox; Japanese, and Susan, Heroine and Exmouth Pink, Singles. Mr. William Yandell displayed many Decorative varieties, including Cranfordia, Bronze Cranfordia, Sunshine, M. Jules Valet and H. W. Thorpe of the Japanese varieties, and many Singles.

An interesting group of seedling Single Chrysanthemums was exhibited from The Mental Hospital (gr. Mr. W. J. Jennings), Napsbury. These were crosses of Molly Godfrey and Sandown Radiance, and Bronze Pagram and Sandown Radiance. In nearly every case the former cross yielded tall plants, while from the latter were obtained very decorative and floriferous plants averaging three feet in height. These displayed an interesting variation in foliage type and also bore goodly quantities of very decorative flowers. Mrs. Urbar H. Broughton (gr. Mr. A. W. Evans), Park Close, Englefield Green, had a tastefully arranged collection of cut Chrysanthemums in such varieties as Mrs. R. C. Pulling, Mrs. T. W. Pockett, George Hopkinson and Mrs. A. Holden.

There were three attractive exhibits of Carnations. Messrs. C. Engelmann, Ltd., included good vases of Laddie, Orange Sunstar, Maine Sunshine and Citron, a pretty yellow Fancy. Their new varieties, Cattleya Mauve and Maud Allwood, occupied prominent places in the collection of Messrs. Allwood Brothers, who also displayed Edward Allwood and Red Laddie, of very bright colour. Messrs. Stuart Low and Co. had large vases of Daphne, Melchet Beauty and Duchess of York, three attractive Fancies, and the richly-coloured Philip Sassoon. Sweet Violets were shown by Mr. J. J. Kettle and Mr. Baldwin Pinney.

There were many exhibits of paintings of flowers and of garden scenes; the most valuable was the recent collection from the brush of Sir Herbert Maxwell, Bt., Monreith, Wigtonshire. This included many artistic and faithful representations of various Rhododendrons, Liliums, Buddleia globosa, Crinum Moorei, C. Powellii, Achillea egyptiaca, Polygonum cuspidatum var. compactum, Cistus Loreti and the fruits of Iris foetidissima.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair), Mr. William Poupart, Mr. George F. Tinley, Mr. T. Pateman, Mr. W. F. Giles, Mr. E. Neal, Mr. F. Jordan, Mr. H. Markham, Mr. W. H. Divers, Mr. H. V. Taylor, Mr. E. A. Bunyard, Mr. Ed. Laxton, Mr. E. Beckett, Mr. W. G. Lobjoit and Mr. A. N. Rawes (Secretary).

Messrs. Laxton Brothers, staged a most attractive lot of Apples, the high colouring of the samples being noticeable. Messrs. Laxton's two new introductions, Lord Lambourne and Superb, were prominently displayed, and it is apparent that these two new varieties are becoming deservedly popular with both amateur and commercial growers.

Mr. Hemsley exhibited a large collection of Apples, which included most of the popular varieties. The quality of the fruits—with few exceptions—was hardly up to the high exhibition standard which recent Apple exhibits have attained.

Messrs. George Bunyard and Co. staged a choice selection of Apples in season. The quality of the fruits left nothing to be desired, and the display was a model of what exhibition fruits should be. Outstandingly good varieties included Cox's Orange Pippin, Charles Ross, Emperor Alexander, King of the Pippins, Peasgood's Nonesuch and Rival.

Messrs. Sutton and Sons exhibited a splendid collection of Potatos, the exhibit comprising some forty-four varieties; twenty-six were immune varieties and two were new introductions. The varieties Dunnottar Castle, Sutton's Epicure, Arran Comrade and Great Scot were shown in superb condition and in greater bulk than the other varieties. The curious salad Potatos, Pink Fir Apple, Large White Fir Apple and Congo, added novelty to this attractive exhibit.

Messrs. Isaac House and Son sent a few dishes of their highly-coloured Apple John Standish. Mr. H. E. Jolly, of Kenley, Surrey, sent two seedling Apples to the Committee, but neither showed any improvement upon existing varieties. A seedling Apple from Mrs. W. J. Bowle, Caldicot, near Newport, was out of condition, being much past its best, so that no opinion could be formed of its merit. Another seedling Apple called Allies Pippin, sent by Mr. A. E. Allies, of Alfrick, Worcester, was raised from a pip of a Canadian Cox's Orange Pippin, but the fruit showed no promise of rivalling its parent, either in quality or appearance.

Mr. W. F. Lloyd-James, of Harrowithy-on-Wye, Herefordshire, exhibited a seedling Apple rather after the style of a small Golden Noble, but it was no improvement upon the old-established cooking variety. A small red seedling Apple from Mr. A. A. Thompson, Ellesmere, was thought to be no improvement upon existing varieties, and a large green cooking Apple from Mr. Hybberd, of Bromley, Kent, appeared unlikely to displace any one of the several splendid culinary varieties in existence.

Messrs. Stuart Low and Co. sent a few fruits of the old Sops-in-Wine Apple for the Committee's opinion. The flavour was very good indeed, and the fruits are beautifully coloured.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, November 4, the members of Committee present were Messrs. Hy. Astley Bell (in the chair), J. B. Adamson, R. Ashworth, A. Burns, A. Coningsby, J. Evans, A. Keeling, G. V. Llewelyn, D. McLeod, W. J. Morgan and H. Arthur, Secretary.

Awards of Merit.

Laelio-Cattleya Mrs. Medo, Llewelyn's var.; L.-C. Mrs. Ethel Rhodes; Cattleya Venus, Orchidhurst var.; and C. labiata, Llewelyn's var.—From G. V. Llewelyn, Esq.

Cattleya Corona Rawdonensis (*Hardyana* × *Mantinii*); *and Cypripedium Louvain, Bolholt var.*—From Captain W. Horridge.

Cypripedium Mrs. H. Arthur (*Nirvana* × *Lloyd George*); *and C. Puffin* (*Demever* × *Alcibiades illustris*).—From Mr. John Evans.

Cypripedium Actaeon (*Colin* × *Chrysostum* × *Nesta*).—From E. D. Bostock, Esq.

Odontoglossum Martius (*Jasper* × *amabile splendens*).—From The Hon. G. E. Vestey.

Cultural Certificates.

To Mr. B. Collins for Odontioda Charlesworthii, and to Mr. G. V. Llewelyn, for Cattleya labiata Llewelyn's var.

Groups.

G. V. Llewelyn, Esq., staged a group to which a Large Silver-gilt Medal was awarded, The exhibit included Cattleya labiata, C. Venus, Orchidhurst var., C. Hardyana and C. Peetersii; Laelio-Cattleya Mrs. Medo, L.-C. Mrs. Ethel Rhodes and L.-C. Soulange; Cypripedium insigne var. Harefield Hall, C. Sanderianum, C. Berryanum, C. Maudiae magnificum, C. Eboriacum, C. Lord Derby, Odontoglossum crispum xanthotes var. Acme, and Miltonia Bleuana grandiflora.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were awarded a Silver-gilt Medal for a group containing Cattleyas Portia, C. Mrs. W. J. Whiteley, Cypripedium Dreadnought, C. Little Gem, C. Maudiae, and home-raised seedlings, with Oncidium cheirophorum.

Mr. John Evans, Colwyn Bay, was awarded a Large Silver Medal for a group that included Cypripedium Mrs. H. Arthur, C. Merlin, C. Maudiae, C. Lucifer Westonbirt var., Odontoglossum Princess Victoria, O. Pescatorei xanthotes, and others.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Silver Medal was awarded. This contained Cypripedium Nabob, C. Boltonii, C. Rosettii, C. Leyburnense, C. Thalia var. Mrs. F. Wellesley, and others.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), staged Cattleya Corona Rawdonensis, C. labiata albanescens, C. Mrs. Pitt and C. Portia, with numerous Cypripediums.

The Hon. G. E. Vestey, Birkdale (gr. Mr. B. Collins), showed Odontoglossum crispum var. Chastity and O. c. Maureen.

Messrs. Keeling and Sons and Mr. D. McLeod showed Cypripediums.

MARLOW CHRYSANTHEMUM.

The sixth exhibition of this Society was held on Wednesday, November 2, at the Public Hall, Marlow. It was an excellent show, the hall being filled to its utmost capacity with blooms that would have graced the tables of any of our leading exhibitions.

The leading competition in the cut bloom section was for eight vases of Japanese blooms, three blooms of one variety in each vase. Premier honours were won by Mrs. Hornby Lewis (gr. Mr. A. G. Friend), who staged large and handsome blooms of good colour and beautiful form. Her varieties were Mrs. P. Murray, R. C. Pulling, T. W. Pockett, Mrs. Carpenter, Queen Mary, Majestic, Mrs. G. Drabble and Red Majestic. Second prize was well won by A. G. Bendir, Esq. (gr. Mr. G. Clark), who followed closely with handsome blooms; R. C. Pulling (best bloom in the show), Prince Albert and Majestic were varieties in his exhibit worthy of special mention. Captain A. H. B. Wright (gr. Mr. T. Lewis) was awarded third prize for a meritorious set.

Exceptionally good was the class for six vases of singles, six distinct varieties, six blooms in each vase. There was very little to choose between the exhibits. First prize was awarded to Mrs. Hornby Lewis, who had a beautifully finished lot of flowers. The varieties in this exhibit were Molly, Bronze Molly, Hon. E. Smith, Phyllis Cooper, R. Collins and Absolute. The second prize was won by Lady Vansittart Neale (gr. Mr. J. McCaul), who also had a grand lot of flowers, the better varieties being Sandown Radiance, Bronze Molly, R. Collins and Mrs. H. Woolman. Third prize was awarded to A. G. Bendir, Esq., and fourth prize to Captain Wright, both of whom showed splendid blooms.

In the class for a display of Chrysanthemums, arranged for effect on a table space five feet by three feet, to illustrate the decorative value of the Chrysanthemum, the two exhibitors made an interesting competition. First prize was easily won by Mrs. Hornby Lewis, who staged a great variety of flowers of different types, both large and small-flowered. There were good examples of large Japanese and excellent Singles, all of good form and pleasing colour. Second prize was awarded to C. Glidden Osborne, Esq. (gr. Mr. T. E. Jones), who had smaller blooms. The class for one vase of Incurved Chrysanthemums attracted five entrants. First prize was won by A. G. Bendir, Esq., who staged handsome blooms of Mrs. P. E. Wiseman; with the same variety, C. Glidden Osborne, Esq., was placed second, and with large, unfinished blooms of Ondine Mrs. Hornby Lewis was third.

The exhibits were handsome and well-arranged in the class for a group of Chrysanthemums in pots, arranged on a space six feet by four feet. First prize was awarded to Lady Vansittart Neale for a beautifully finished group in which were plants grown on single stems in comparatively small pots, each carrying blooms of splendid quality. Second prize was secured by A. R. A. Heath, Esq. (gr. Mr. J. Pratt), whose arrangement was rather less formal than that of the leading group; Single-flowered sorts were also used. Third prize was won by F. A. Bantor, Esq. (gr. Mr. W. Clark), who had a neat and even group of excellent flowers.

The chief class in the local division was for twelve Japanese blooms, distinct, shown on boards, for which a Challenge Cup is offered. The Cup and first prize were won by Mrs. Hornby Lewis, who had a most attractive and even lot of blooms. The best varieties were Majestic, R. C. Pulling, Mrs. G. Drabble, Red Majestic, T. W. Pockett, Wm. Rigby, Mrs. Carpenter and Queen Mary. A neat and even lot of blooms of good colour and form won second prize for A. G. Bendir, Esq.; Captain Wright was third.

For a hand-basket of Chrysanthemums, arranged with foliage, berries and grasses, Mrs. Friend was a good first with a handsome arrangement of large, golden, single blooms, and a good bronze decorative sort; second prize was awarded to Mrs. Batting for a very neat basket, and Mrs. A. H. B. Wright was placed third.

For the best decorated table there were four competitors. An interesting display made of a small, crimson, Single Chrysanthemum was the best, and this was shown by Mrs. Platt; a dainty table of crimson and yellow flowers gained second prize for Mrs. Batting, and Mrs. Friend was placed third.

BIRMINGHAM AND MIDLAND GARDENERS'.

The fortnightly meeting was held at the Chamber of Commerce on Monday, November 7. Mr. J. Smith presided. The lecturer was Mr. J. Palmer, Manager of the Chad Valley Nurseries (Messrs. W. H. Simpson and Sons), who selected for his subject, "Some New Herbaceous Plants." As Mr. Palmer is well-known there was a full attendance of members to hear him. The subject was dealt with very fully and in a pleasing manner; in fact, it was suggested that the lecture be prepared in pamphlet form with a view to distribution at a nominal charge.

NATIONAL CHRYSANTHEMUM.

At the meeting of the Floral Committee, held at the Royal Horticultural Hall, on November 14, eighteen novelties were submitted for consideration, and the following awards were made:—

First Class Certificates.

Enid. V. 2*a*.—A handsome and very bright chestnut-terra-cotta Single variety.

Albion. II. 1*c*.—A very dainty, slightly reflexing, white, decorative variety that promises to be very useful for cutting and for market. Both these varieties were shown by Mr. H. Shoesmith, Junr.

Mrs. E. H. Pearce. II. 2*a*.—A very big, loosely-incurving Japanese variety, with broad florets of a green-tinted, white shade, which is very distinct, but not particularly beautiful. Shown by Mr. E. H. Pearce, Long Sutton Gardens, Basingstoke.

Leicester. II. 1*a*.—A very effective, bright chestnut Japanese variety, with a golden reverse to the broad florets. Shown by Mr. H. Woolman.

Annice. 1*b*.—A beautiful silvery-lilac Incurved variety with flowers carried on stiff stems. It should prove a very useful market and decorative sort.

Dark Lady. II. 1*b*.—A medium-sized, decorative Japanese variety of very rich, deep ruby-crimson colour that shows up very effectively under artificial light. Both these varieties were shown by Messrs. Cragg, Harrison and Cragg.

GLASGOW AND WEST OF SCOTLAND.

The Annual Meeting of the Glasgow and West of Scotland Horticultural Society was held on Wednesday November 9, when Mr. Thomas Dagg, presided over a large attendance. The financial statement submitted by the Treasurer showed a credit balance of £25 1s. 8d., after wiping off the loss of £185 incurred in 1926. The membership numbered 510 as compared with 532.

Sir John Reed was unanimously re-elected President, and the following amateurs were, on a card vote, added to the Directorate:—Mr. John Bell, Bearsden; Mr. Duncan Cowell, Busby; Mr. J. H. McDonald, Glasgow; Mr. Thomas Nelson, Rutherglen; and Mr. J. G. Roberts, Barrhead.

The Chairman explained that there was little prospect of the Corporation coming in as joint promoters of the Flower Show in 1928, owing to the state of the Common Good fund, and the Society had in consequence made application for the Kelvin Hall. The date of the show would probably be put forward a week.

DERBYSHIRE HORTICULTURAL.

The twentieth annual Chrysanthemum Show, held in the Royal Drill Hall, on November 3, 4 and 5, opened by Captain J. A. E. Drury Lowe, of Locko Park, was the finest exhibition yet seen in Derby.

There were five miscellaneous groups. The first prize and Gold Medal, offered by H. T. Ann, Esq., Derby, were awarded to Mrs. Walter Evans, Darley Abbey (gr. Mr. J. Maxfield), for a display containing Cypripediums, Carnations, Nandina domestica, Liliums, Eulalias and Palms; second prize was won by A. Preston Jones, Esq., Mickleover (gr. Mr. J. Bacon), for a wonderful colour scheme in Begonia Optima, excellent Cyclamens, Dracaenas, Grevillea robusta, Eulalias, Nephrolepsis todeaoides, Adiantums and Kentias; the third prize went to a group from Captain J. A. E. Drury Lowe, Locko Park (gr. Mr. A. E. Yallop), that contained well-grown plants of Begonia Gloire de Lorraine, Blanche Poitevine Chrysanthemums, Primula obconica, Eulalias and Ferns. Sir William Bass, Bart., Berkeley Lodge, Burton-on-Trent (gr. Mr. H. E. House), displayed a charming arrangement in the centre of the hall, composed entirely of Cypripediums and Cattleyas, Plumbago rosea and Grevillea robusta being used for effect. The remaining group was from G. H. Strutt, Esq., Belper (gr. Mr. J. Tannock), where the finest Kentia in the show was seen, the principal plants in this display being Lilium speciosum Melpomene, Codiaeums, and Coleus.

A rare collection of Orchids, kindly sent by Captain J. A. E. Drury Lowe, was awarded a Gold Medal, while from the same estate came economic plants, viz., Cinnamon, Banana (Musa Cavendishii), India Rubber, and Derbyshire-grown Lemons.

In the classes for Japanese blooms a very marked advance was noticeable for size, depth and finish of bloom; many new varieties were shown for the first time in Derby. Mr. H. H. Tomlinson won two Silver Cups in this section.

Single varieties were remarkable considering the early date of the show; the display arranged by J. A. Alton, Esq., Duffield Park, was awarded first prize and the Silver Cup presented by G. H. Strutt, Esq.

Keen competition in the fruit-collection classes provided a most difficult task for the judges; pointing under Royal Horticultural Society's rules resulted in Lord Belper (gr. Mr. J. McCartney) winning first prize with 42½ points; his opponent, Mrs. Walter Evans, gaining 42 points; A. Preston Jones, Esq., coming third. Muscat of Alexandria, Alicante and Gros Colmar, Grapes were shown in fine condition.

Trade exhibits from Mr. H. Woolman, Messrs. William Lowe and Son, and Messrs. J. M. Stewart and Son, Ltd., were awarded Gold Medals; Messrs. Vickers and Mr. W. Gregory gaining Silver Medals.

Unprecedented support was accorded this show by the general public, and though the hall is of large dimensions, it was taxed to its fullest capacity.

The Secretarial duties were carried out this year by Mr. W. Wardman, 5, St. Augustine Street, Derby.

The dates of the next show have been fixed for November 8, 9 and 10, 1928.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on November 1, Mr. W. J. Thomson, President, in the chair.

Mr. A. W. Brown, Perth, read a paper entitled, "The Psychology of the Garden," in which he dealt chiefly with the balance of nature as between insects, birds and other beneficial and noxious animals.

Cultural Certificates were awarded to the Edinburgh Public Parks Department for Begonia Optima, and to Mr. J. Miller for Primula obconica. Messrs. Dobbie and Co., Ltd., exhibited Gloxinias, and Mr. W. J. Scarlett, Inveresk, an Apple-shaped Cucumber. Mr. W. Patterson, Clifton Lodge, Murrayfield, was awarded the first prize in the competition for Chrysanthemums, Messrs. Wilson and Co., Duddingston, being second. In the Celery competition, Mr. John Waugh, Inveresk Lodge, Musselburgh, was placed first, and Mr. James Keddie, Davidsons Mains, second.

READING AND DISTRICT GARDENERS'.

Over one hundred members assembled at the Abbey Hall, at the meeting, held on Monday, November 7, and presided over by Mr. J. R. Lloyd.

The subject for the evening's discussion was "Violas," and this was introduced in a most practical manner by Mr. M. Goddard, The Gardens, Bear Wood, who stated that Violas and Pansies were familiar to all garden lovers, for they could be grown equally as well in the cottage garden as in large establishments. A short history of the plant was given from the year 1813 until the present time, showing that the aim of the florist was to obtain a flower of perfect outline, with well-defined blotches and margins, great substance of petal and clear deep colour. Many useful hints were given as to propagation and the best varieties were named.

There were some excellent exhibits in the competitive and non-competitive sections. In the latter section First Class Certificates were awarded to the following:—Mr. E. Cooper, Conisborough Avenue, Caversham (and congratulations of the Association), for a very fine batch of seedling Cyclamens; Mr. A. W. Gower, The Gardens, Calcot Grange, for three vases of excellent blooms of Chrysanthemums Romance, Blanche Poitevine and Mrs. G. Monro; and Mr. F. Turner, Sunnyside, Calcot, for specimen plants of Blanche Poitevine Chrysanthemums. Awards of Merit were granted to Mr. F. G. Rabbetts, The Gardens, Bulmershe Court, for two vases of Roses, and to Mr. G. Clark, The Gardens, Dyson's Wood, for two vases of Chrysanthemum Blanche Poitevine.

In Class 1, for a bowl of Chrysanthemums arranged for effect, there were seven entries, the first prize being won by Mr. H. G. Loader, The Gardens, Aldermaston Court; the second by Mr. A. W. Gower, and the third by Mr. A. H. Fulker, The Gardens, Elmhurst, Reading. In Class 2, for a bowl of flowers and foliage, berries allowed, there were four entries. The first prize was won by Mr. J. Wynn, The Gardens, Hammonds, Checkendon; the second, Mr. H. Wynn, The Gardens, Woodcote House; and the third, Mr. A. H. Fulker.

ANSWERS TO CORRESPONDENTS.

Book on Floral Decoration.—*D. McK. S.* So far as we are aware, there is no book in print dealing with floral decoration.

Destruction of Old Tree Stumps.—*C. R.* Statements are sometimes made to the effect that by boring holes one inch in diameter a few inches apart round the margins of tree butts, filling the holes with saltpetre and allowing them to remain for three months, then filling the holes with paraffin and applying a light, the stumps can be burned away. In practice the operation does not act or, at the best, is only partially successful. All that can be done is to grub the butts up; we know of no easy method of destroying them whilst they remain in the ground.

Names of Fruits.—*D. A., Midlothian.* 1, Irish Reinette; 2, Dumelow's Seedling (syn. Wellington).—*H. W.* 1, Round Winter Nonesuch; 2, Beauty of Kent; 3, Dumelow's Seedling; 4, King of the Pippins.—*R. D.* 1, Pear Souvenir de Congrès; 2, Apple Blenheim Pippin; 3, Pear, decayed.—*D. C.* 1, Christmas Pearmain; 2, Lady Henniker.—*E. C. B.* Hambledon Deux Ans.—*F. W.* 1, Stirling Castle; 2, decayed; 3, Blenheim Pippin; 4, Hollandbury; 5, Reinette de Caux; 6, French Crab; 7, Sturmer Pippin.—*F. P.* 1, Fondante de Panisel (syn. Délices de Angiers); 2 and 5, decayed; 3, Conseiller de la Cour; 4, Zéphirin Grégoire; 6, De Neige; 7, Court Pendû-Plat; 8, Allington Pippin; 9, Cornish Aromatic; 10, Marie Louise; 11, Cellini; 12, Beurré Sterckmans.—*W. C. H.* Apples; 1, Cellini; 2, Nanny; 3, Lady Henniker; 4, Golden Noble; 5, Forfar; Pears: 1, Vicar of Winkfield; 2, Doyenné Boussoch; 3 Baronne de Mello; 4, Beurré d'Amanlis.—*W. W.* 1, Doyenné Gris (dessert); 2, decayed.—*H. N.* 1, Mère de Ménage; 2, Dumelow's Seedling; 3, Lady Henniker; 4, Bramley's Seedling; 5, Emperor Alexander; 6, Cox's Pomona; 7, Lord Derby; 8, not recognised; 9, Beauty of Kent; 10, Dean's Codlin; 11, Reinette du Canada; 12, Allington Pippin.—*W. D. and S.* 1, Golden Noble; 2, Reinette Tres Tardive.—*E. T. P.* 1, Court Pendû-Plat; 2 and 3, Old Nonesuch; 3, not recognised; 5, Kentish Fillbasket; 6, Dean's Codlin; 7, Maltster; 8, Scarlet Nonpareil; 9, Royal Russet.—*J. J. T.* The two Apples are the variety Lady Sudeley.—*J. G. M.* 1, decayed, cannot be identified; 2, Scarlet Golden Pippin; 3, Striped Beefing; 4, Duchess of Gloucester; 5, King of the Pippins.—*Constant Reader.* 1, Gascoyne's Scarlet; 2, The Queen; 3, Queen Caroline; 4, Mère de Ménage; 5, King of the Pippins; 6, Alfriston; 7, Golden Noble.—*C. H. C.* Apple Peasgood's Nonesuch.—*T. B.* 1, Winter Nonesuch; 2, Wyken Pippen; 3, Broad-Eyed Pippin; 4 and 33, Hanwell Souring; 5, Lemon Pippin; 6, Claygate Pearmain; 7, Blenheim Orange; 8, Baldwin; 9, Ashmead's Kernel; 10, Dean's Codlin; 11, 17, 28 and 29, not recognised; 12, Dumelow's Seedling; 13, Hoary Morning; 14, Dutch Mignonne; 15, Yorkshire Beauty; 16, Dutch Codlin; 18 and 19, Api Rose; 20, Lady's Finger; 21, Mabbot's Pearmain; 22, Melon Apple; 23, Beurré de Jonghe; 24, Beurré Capiaumont; 25, Louise Bonne of Jersey; 26, Prince Consort; 27, decayed; 30, Duke of Devonshire; 31, Golden Reinette; 32, Ribston Pippin.

Communications Received.—W. F. R.—C. A. W.—R. P. G.—S. P. S.—H. C.—Altho.—H. A. S.—S. H. G.—H. A.—W. E. W.—W. Y. S.—H. B.—G. A. G.—J. C.

MARKETS.

COVENT GARDEN, Tuesday, November 15th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	10 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0-40 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	16 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's per doz.—	
pink... ...	18 0-21 0
—yellow ...	12 0-18 0
—bronze ...	15 0-18 0
—white ...	12 0-18 0
—red	15 0-18 0

	s. d. s. d.
Crotons, doz. ...	30 0-45 0
Cyrtomiums ...	10 0-25 0
Erica gracilis, 48's, per doz.	24 0-30 0
— — 60's, doz.	12 0-15 0
—mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0-30 0
— — 60's, doz.	12 0-15 0
Nephrolepis in variety ...	12 0—8 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	15 0-18 0
—60's, per doz.	8 0-10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0-12 0
—cuneatum, per doz. bun. ...	8 0—9 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	5 0—7 0
Asparagus plumosus, per bun., long trails, 6's-...	2 0—2 6
—med. sprays	1 6—2 6
short ,, ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0 2 6
med, ,, ...	1 0—1 6
short, ,, ...	0 6—1 9
Camellias, white, 12's, 18's per box. ...	2 6—3 0
Carnations, per doz. blooms .	3 6—5 6
Chrysanthemums, per doz. blooms—	
—white ...	4 0—6 0
—yellow ...	4 0—6 0
—pink... ...	4 0—6 0
—bronze ...	3 0—5 0
—red	3 0—6 0
—single varieties	2 6—4 0
—spray, bronze, per doz. bun.	12 0-18 0
—spray, pink, per doz. bun.	15 0-18 0
—spray, yellow, per doz. bun.	12 0-15 0
—spray, white, per doz. bun.	12 0-24 0
—single varieties, spray, per doz. bun.... ...	15 0-24 0
Cornflower, blue, per doz. bun.	2 6—3 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	10 0-12 0
French flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Narcissus, Paper White, per doz. bun.	4 6—5 0
—Violets, Parma, large, per bun..	3 6—4 0
—Ruscus, green, per pad ...	4 0—5 0
—Solanum fruits, per pad ...	6 0—7 0

	s. d. s. d.
French flowers—	
—Anemones, mixed, per doz. bun.	6 0—9 0
—Ranunculus, carmine, per doz. bun.	8 0—9 0
— — Burbaron, per doz. bun.	8 0—9 0
— — Romano, per doz. bun.	12 0-15 0
—Marguerite, yellow, per doz. bun. ...	2 6—3 0
—Violets, single, per doz. bun.	4 0—5 0
Gardenias, per doz. blooms .	5 0—6 0
Heather, white, per doz. bun.	— 12 0
Hyacinths, Roman, 6's, per doz. bun.	2 6—3 0
Lilac, white, per doz. sprays...	4 0—5 0
Lilium auratum, per doz. blooms	5 0—6 0
—speciosum album, per bun.	4 6—5 0
—short, per doz.	4 6—5 0
—rubrum, long, per bun ...	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per bun.	3 6—4 0
—short, per doz. blooms ...	3 6—4 0
Lily-of-the-Valley, per doz. bun.	24 0-30 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Orchids, per doz.	
—Cattleyas ...	21 0-30 0
—Cypripediums	4 0—6 0
Roses, per doz. blooms—	
—Columbia ...	4 0—5 0
—Richmond ...	4 0—6 0
—Madame Butterfly ...	4 6—6 0
—Golden Ophelia	3 6—5 0
—Roselandia ...	4 6—6 0
—Madame Abel Chatenay ...	3 0—5 0
—Liberty ...	4 6—5 0
—Molly Sharman Crawford ...	3 6—4 6
—Premier ...	3 6—5 0
Smilax, per doz. trails ...	2 6—3 0
Violets, per doz. bun.... ...	3 0—6 0

REMARKS.—A few bunches of Roman Hyacinths and Narcissus Soliel d'Or are the newest arrivals in the English flower market. The supplies throughout the cut flower department are considerably shorter than a week ago and prices are already much higher, especially for Carnations and Roses. The latter are now insufficient to meet requirements. All Chrysanthemums have become more valuable now the outdoor blooms are over. Disbudded blooms and the best lines in bunch stuff have been in good demand. Arum (Richardias) and Lilies are now arriving in good condition and prices are firmer, also for L. longiflorum and L. speciosum album; L. rubrum remains fairly plentiful. Single Violets have arrived in reduced quantities throughout the past week. Amongst Orchids, Cattleyas and Cypripediums have been arriving in large quantities. All French blooms are receiving more attention. Paper White Narcissi, Acacia (Mimosa), and yellow Marguerites are now arriving in much better condition. The newest arrivals during the past week have been Anemones, scarlet Ranunculus, which is very fine in quality; Carnations, Safrano Roses and a few baskets of Tuberoses. Large bunches of Parma Violets have been in greater demand and prices are firmer to-day. Other lines are Eucalyptus, Ruscus, Chillies and Solanum berries. Single Violets have been received, but only in poor condition.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Newton Wonder	4 0—6 0
—Lane's Prince Albert ...	4 0—6 0
—Bramley's Seedling ...	4 0—8 0
—Other cookers	3 0—5 0
—Cox's Orange Pippin, per case	20 0-40 0
½-sieve ...	6 0-15 0
—Blenheim Pippin, ½-sieve...	2 6—3 6
—Ribston Pippin, ½-sieve ...	3 0—6 0
Apples, American—	
—York Imperials, per barrel ...	32 0-35 0
—King David, per case ...	14 0-16 0
—Winter Banana ...	13 0-14 6
—Jonathan ...	16 0-18 0
—Oregon, Newtown Pippin	18 0-21 0
—G. Russet ...	35 0-40 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½-barrel ...	22 0-28 0
—Ribston Pippin, per barrel ...	25 0-30 0
—Blenheim Pippin, per barrel	24 0-25 0
Bananas ...	18 0-27 6

	s. d. s. d.
Figs, French, per box ...	1 6—2 0
Grape Fruit—	
—Blue Goose...	20 0-25 0
—Jamaica, case	18 0-20 0
Grapes, English	
—Alicante ...	1 0—2 6
—Colmar ...	1 6—3 6
—Muscat ...	3 0—6 0
—Canon Hall ...	5 0—7 0
Lemons, Messina, per case ...	28 0-30 0
—boxes ...	10 0-15 0
Nuts—	
—Cobs ...	1 2—1 3
—Walnuts, Grenoble, per bag	4 0-10 0
—Chestnuts, Italian, bag .	20 0-27 6
Oranges, per case—	
—Australian Valencia, tray	6 6—7 0
—Cape Valencia	20 0-25 0
Pears—	
—Pitmaston Duchess, trays	3 0—4 0
—Beurré Hardy, per doz. ...	2 0—3 0
—Doyenné du Comice, per doz.... ...	2 0—6 0
Pears, Californian—	
—Beurré D'Anjou	24 0-28 0
—Winter Nelis	26 0-30 0
—Washington Flemish Beauty	24 0-26 0
Pines, case ...	25 0-37 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon ...	10 0-10 0
—Italian ...	2 0—4 0
—Paris Green...	7 0—8 0
Aubergines, per doz.... ...	1 6—2 0
Beans, Madeira, per box ...	2 6—4 0
Beets	4 0—6 0
Brussels Sprouts, ½-bag ...	2 6—3 6
Carrots, per bag	4 0—5 0
Cucumbers, doz.	10 0-12 0
—flats, 36's 42's	18 0- 0 0
French Endive, per doz. ...	2 0—2 6
—Batavia, per doz.	2 0-2 6
Guernsey Beans, per lb. ...	0 10-1 6
Leeks, per doz.	2 0—3 0
Lettuce, French, round, per doz.	1 6—2 6
—French, 5 doz. crates ...	6 6—7 6
Mint, forced, per doz. bun.	4 0—6 0

	s. d. s. d.
Mushrooms—	
—Cups ...	3 0—4 0
—Broilers ...	2 6—3 0
Onions—	
—Dutch ...	8 6—9 6
—Spanish ...	13 6-15 0
Parsnips, cwt. .	4 0—5 0
Peas, Guernsey, per lb. ...	1 0—2 6
Potatos—	
—English, cwt.	5 0—8 0
—Guernsey, new, per lb. ...	0 8—1 0
—Azores, case	20 0-25 0
Tomatos, English—	
New Crop—	
—pink... ...	7 0-10 0
—pink and white	7 0-10 0
—white ...	5 0—6 0
Old Crop—	
—pink... ...	2 6—4 0
—pink and white	2 6—4 0
—white ...	2 0—2 6
—blue ...	2 0—2 6
—Jersey ...	2 6—5 0
—Canary ...	12 0-18 0
Turnips, per cwt.	3 6—4 0

REMARKS.—Some slackening in demand has been noticeable this week, almost all sections reporting quiet conditions. The Apple market is particularly slow, very few deals being negotiated for either English or imported fruits. There is a small inquiry for really top-grade Bramley's Seedling, but buyers are not in the mood to pay higher prices than those which growers would consider moderate. For the time of year, hothouse Grapes are fairly plentiful, with a demand anything but active. A sprinkling of Doyenné du Comice Pears, mainly packed in trays, sell fairly freely, but at low prices, except for a few very choice specimens. English Tomatos are scarce and dear, and even arrivals from the Canary Islands are realising quite good figures. Cucumbers move very slowly, trade in this section being almost stagnant. Hothouse new Potatos are another line which is selling badly at the moment. Guernsey Beans, although not selling at very high prices, are going out fairly satisfactorily in spite of rather heavy supplies of Beans from Madeira. Mushrooms are scarce and costly, supplies being restricted, due, no doubt, to the few days of cold weather experienced just recently. Salads, mainly from France, are more abundant and quite popular. Cauliflowers and green vegetables are selling rather slowly. The Potato trade is steady, and good tubers hold a firm price lead.

GLASGOW.

Although the tone of the cut flower market was firmer at the end of the week, prices of Chrysanthemums continued low, notwithstanding the shrinkage in daily supplies. Phyllis Cooper and Mason's Bronze ranged from 1s. 3d. to 1s. 6d. for 6's; Blanche Poitou, 8d. to 1s.; Pagram 1s. to 1s. 3d.; Peggy, 10d. to 1s.; Jean Pattisson, 7d. to 1s.; La Pactole, 6d. to 1s.; Delores, 6d. to 10d.; White and Yellow Thorpe, 9d. to 1s.; ordinary, 6d. to 9d.; Almirante, 8d. to 10d.; medium, 6d. to 8d.; and Ivy Edwards, 5d. to 8d. per bunch. Carnations were 3s. 6d. to 4s. per dozen. Pink Roses were firmer at 4s. 6d. to 5s. 6d; red, 1s. 6d. to 2s. 6d.; white, 1s. 6d. to 2s. 6d.; Lilium longiflorum (Harrisii), 3s. to 3s. 6d. per bunch; L. speciosum rubrum, 2s.; Smilax, 1s. to 1s. 6d., and Asparagus, 9d. to 1s. 6d.

In the fruit market, Apples were more plentiful, and prices were well maintained as follow:—Canadian King Pippins, No. 1, 42s. to 44s. per barrel; No. 2, 34s.; domestic, 35s.; Spy, No. 1, 44s.; No. 2, 40s.; domestic, 32s.; Nova Scotia Kings, No. 1, 30s.; domestic and No. 2, 24s.; No. 3, 21s.; Blenheim Pippin, No. 1, 26s.; No. 2 and domestic, 22s.; No. 3, 18s. 6d.; Wagener, No. 1, 27s.; No. 2, 24s.; domestic, 23s. and No. 3, 20s.; York Imperial, 26s. to 30s.; Ganos, 23s. to 26s.; Jonathan, 15s. 6d. to 16s. 6d. per case; McIntosh Red, 15s. 6d. to 17s. 6d.; Delicious, 20s.; Bramley's Seedling. 20s. per cwt. Grape Fruits were cheap at 16s. per case; Porto Rico Oranges, 20s. per case; South African, 26s.; Sunkist, 38s.; Brazil, 25s. to 26s.; Jaffa, 19s. (144's); Doyenné du Comice Pears, 16s. to 17s. 6d. per half-case; Winter Nelis, 25s.; Beurré d' Anjou, 27s.; Kippen Grapes, 3s. 6d. to 4s. per lb.; English Colmar, 2s. 6d.

Vegetables were steady, excepting Cucumbers, which advanced sharply to 12s. and 14s. per dozen; Cauliflowers, 6s.; Lettuce, 1s. 9d. to 2s.; Endive, 5s.; Tomatos, 1s. per lb.; and Brussels Sprouts, 2s. 6d. per stone.

THE WEATHER IN OCTOBER.

After October 2, the first half of the month was exceptionally dry, calm and sunny, such winds as there were being mainly from easterly points—the soft, humid, serene variety of early autumn, entirely different to those of spring. Then the weather broke, and the latter half of the month was characterised by very unsettled conditions, under westerly and southerly currents. There was frequently much warmth, however, during both periods. and the mean temperature for the whole 31 days was 51½° or 2½° above the average. Owing to unusually sunny afternoons, the total duration of bright sunshine amounted to 107½ hours, or 10½ hours more than the normal. Rain fell on 17 days, or only one less than usual, in spite of a perfectly rainless stretch from the 2nd to the 12th. The total precipitation was 3·05 inches, or 0·66 inch under the average. Haze, mist and night fogs were unusually prevalent. Slight ground frosts occurred on five dates. A strong gale was experienced on the 2nd, and an exceptionally violent storm during the night of the 28th to 29th, in which a wind speed of 70 miles was recorded, centering at midnight, and in momentary gusts a rate of 96 or 97 miles per hour was attained. The direction was W.S.W. No approximately similar gale of such severity has visited Southport for nearly a quarter of a century. *Joseph Baxendell, The Fernley Observatory, Southport.*

GARDENING APPOINTMENTS.

Mr. P W. Ambrose, recently gardener to VISCOUNTESS SUMNER, Ibstone House, Bucks., as gardener to Lt.-Col. NICHOLL, Merthyr Mawr, Bridgend, Glamorganshire, South Wales. (Thanks for 2/6 for R.G.O.F. Box.—EDS.).

Mr. Robert Scrimgeour for the past two years foreman to LORD HAMILTON, at Dalzell, Motherwell, as gardener to Lt.-Col. REID-THORPE, Mandeville Manor, Banbury, Oxfordshire.

Mr. W. G. Sims for the past four years gardener-bailiff to the late Sir ARTHUR WHINNEY, K.B.E., Lee Place, Charlbury, Oxon, and previously with Col. ASHLEY, M.P., at The Grove, Stanmore, Middlesex, as gardener-bailiff to A. E. FRANKLIN, Esq., Chartridge Lodge, Chesham, Buckinghamshire. (Thanks for 2/6 for R.G.O.F. Box.—EDS.)

Mr. W. H. Ware, late gardener to E. W. Ritchie, Esq., Boxhurst, Dorking, and formerly gardener-bailiff at Broome Park, Betchworth, as gardener to T. F. WHIFFEN, Esq., at Barn Rocks, Aldwick, near Bognor, Sussex.

Mr. C. A. Corke, formerly Senior Instructor, Horticultural section, Sixth Division School, Irish Command as gardener to G. C. LEES-MILNE, Esq., at Wickhamford Manor, near Evesham.

CATALOGUES RECEIVED.

BENJAMIN REID AND CO., 72, Guild Street, Aberdeen.—Forest trees, shrubs, Roses, etc.

H. J. JONES, Ryecroft Nurseries, Lewisham.—Chrysanthemums, Michaelmas Daisies, etc.

HERD BROS., Market Square, Penrith.—Forest, fruit and ornamental trees, shrubs, Roses, etc.

J. BARBOUR AND SONS, LTD., 66, Beacon Buildings, South Shields.—Weatherproof specialities.

Foreign.

WILHELM PFITZER, Stuttgart, Germany.—Novelties.

THE
Gardeners' Chronicle
No. 2135—*SATURDAY, NOVEMBER* 26, 1927.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the past fifty years at Greenwich, 41·1.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 23, 10 a.m. Bar. 30.0. Temp. 40°. Weather, Very dull.

The Seed Potato Industry in Ireland.

IN former years. Ireland was gaining rapidly a reputation for seed Potatos. Trials carried out in different parts of the country had shown that Irish seed from suitable districts was little, if at all, inferior to Scotch seed. As a consequence of the growing reputation an export trade of considerable promise began to develop, not only with this country, but so far afield as Malta. During the troubled times of 1916 to 1920, the care required to conduct this trade successfully was not given. Seed of indifferent quality was exported, and naturally the export trade declined. With more settled times the Ministry of Agriculture of the Free State has concentrated its attention on the subject. It is of good augury that they should have done so, for in the first place no Ministry of Agriculture has more drive and capacity, and in the second, the Potato industry in the Free State is one of great magnitude and importance. There are no fewer than 500,000 acres under this crop in the Free State. Cultivation often reaches a very high level. Crops of twenty tons per acre and over are looked for and obtained by the best cultivators—and as those who know the country are aware, good cultivators in Ireland are very good indeed. Thanks largely to the influence of the Ministry, spraying—an essential accompaniment of Potato-growing in Ireland—is very generally practised, and thanks also to the same influence, the oft-proved fact that no crop responds more surely to artificial fertilisers, is becoming more and more widely applied in practice. It is curious that even though trials and repeated trials have demonstrated conclusively the advantages of certain practices, large numbers of cultivators continue to ignore them. We suppose that few, if any, first-class Potato growers would demur to the statement that a suitable and liberal fertiliser mixture ensures the maximum yield of which a given plot of ground is capable. Such a mixture used by many of the best cultivators consists of sulphate of ammonia, 2½ cwts. to the acre; superphosphate, 4 to 5 cwts. to the acre; and sulphate of potash, 1½ to 2 cwts. to the acre. Yet how many growers, both on farm and garden, if they use fertilisers at all fail to use them on this liberal scale? The Free State then can grow Potatos well and has many advantages which qualify it to build up a thriving trade in seed Potatos. Those obscure, but ubiquitous, menaces to successful Potato cultivation, the virus diseases, appear, generally speaking, to have established themselves to a lesser degree in Ireland than in this country. According to Dr. Murphy, who has done so much to advance knowledge of virus diseases of the Potato, it is not infrequent to find stocks of Potatos grown in Ireland which are entirely free from these diseases. A sympathetic account of seed Potato growing in Ireland, published in the *Journal* of the Ministry of Agriculture of England*, states that one of this group of diseases, namely, Leaf Roll, is not to be found among stocks grown for seed purposes, and that some of the stocks inspected were "practically free from Mosaic," albeit that occasionally both the mild form of this disease and also the more serious form (Crinkle) were to be found. On the other hand, another disease, Black Leg, was fairly prevalent. The Free State Government is promoting the seed Potato industry by means of a scheme which involves inspection and careful rogueing, and growers who desire to try Irish seed should take care to purchase seed certified under the scheme. Scotland has won and has deserved to win pre-eminence as the supplier of good Potato seed, but it is well for growers generally that there should be another source available: for progress is the echo of the clash of competition.

R.H.S. Gardeners' Diary for 1928.—The handy *Gardeners' Diary* for the coming year, published for the Royal Horticultural Society by Messrs. Charles Letts and Co., and edited by Mr. F. R. Durham, is now available. As usual, the diary contains a large amount of information, useful alike to amateur and professional gardeners. It contains planting tables, tables of weights and measures, dates of the R.H.S. meetings, lists of the R.H.S. publications, remedies for the pests and diseases of plants, and pages for memoranda. Copies may be obtained post free for 2s. 2d. from our Publishing Department, 5, Tavistock Street, W.C.2.

Mr. W. Auton.—We feel sure that our many readers will be pleased and interested to learn that Mr. W. Auton has been appointed Garden Superintendent at the Nitram Research Station and Experimental Farm, Jealott's Hill, Warfield, near Bracknell. For many years Mr. Auton has been gardener to Lord Elveden (now Lord Iveagh), at Pyrford Court, Woking, and quite recently he paid a visit to the West Indies on behalf of Adco Ltd. He has had a wide and varied experience, gained in France and Germany as well as in England, and as he is particularly interested in experimental work, we feel sure he will be successful in the new position which he takes up on December 15.

National Dahlia Society.—The annual meeting of the National Dahlia Society will be held on Tuesday, November 29th, 1927, at 4.15 p.m., in the Royal Horticultural Hall, Vincent Square, Westminster.

Red Squill as a Rat Poison.—The Ministry of Agriculture* recommends the use of Red Squill poison for the destruction of rats and mice, particularly in places where there are poultry, live-stock, domestic animals or stored food. Red Squill is an extract from the bulb of Urginia maritima, a plant growing on the sandy shore of the Mediterranean. It should be used in powdered or liquid form in baits composed of bread (or oatmeal), fat, syrup and a few drops of aniseed. It may also be obtained ready for use in biscuit form. The latter, which is very effective, must be fresh, and the biscuits, broken, if necessary, must be put in place with a gloved hand, for otherwise the bait is apt to be refused.

The Use of Sulphate of Ammonia on Golf Greens.—The experiments at Stoke Poges on the use of sulphate of ammonia on golf greens, described on page 61, have now been in progress for some seven months and are being continued. The results obtained are proving of considerable interest, and will be described in a forthcoming issue of this journal.

Veteran German Horticulturist. — Herr Hermann A. Hesse, the well-known German nurseryman, of Weener, Ems, has just celebrated (November 14) his seventy-fifth birthday, "in volle Frische" as the phrase runs, or, as we should say, in full health and vigour. Born of a horticultural family, Herr Hesse began at a very early age to follow the profession of a nurseryman, specialising a little later in trees and shrubs. He went to various places in the pursuit of knowledge, including Paris and other parts of France, and also England, where he visited Thomas Rivers' nurseries in 1879. In the autumn of the same year he opened his present nursery establishment at Weener, though he was warned by all his friends that a nursery in East Friesland would never succeed. By means of talent and perseverance, however, the venture was made a success, and gradually assumed the immense proportions of the present time. So far as trees and shrubs are concerned, it may be stated that what cannot be obtained from Herr Hesse is not to be found in Germany at all. Herr Hesse has the distinction of being a Kommerzienrat; he is unmarried, and has made over the active management of his huge business to his five nephews, while he himself has retired to a property not far from the nurseries where he still cultivates the subjects which have been his life-long passion.

Almond Industry in Majorca.—In a very interesting account of agriculture and horticulture in Majorca, contributed to the current issue of the *Kew Bulletin*, Mr. W. Dallimore makes special reference to the Almond industry of the island. He states that: "The most important crop of the island is undoubtedly the Almond. Of this a large number of varieties are cultivated. There is a doubt, however, as to whether many of these varieties are distinct and whether one variety may not be known under different names in different districts. This is one of the problems that Don Filipe Fuster Rosenol is setting himself to solve. He intends to collect all the named sorts and, if possible, reduce the number by grouping those that are alike under one definite name. A great deal of trouble is taken with the cultivation of Almond trees. In some cases they are planted in orchards many acres in extent, in others a few trees are grouped on a small terrace held up by stone walls. In almost all cases the trees are widely spaced and it is unusual for the branches of two trees to meet. The ground beneath the trees is cultivated, and from it a crop of Broad Beans or Corn is taken during the winter and spring months. It lies fallow during summer and is ploughed as soon as the Almonds are gathered. Both chemical and farmyard manures are used as fertilisers, and in many places the land appears to be on the poor side. Very often the orchards are composed entirely of Almonds, but in some there may be a mixture of Almonds, Olives, Carobs, or Figs. Mixed orchards are more common on the higher land than on the plains. When the Almonds are ripe they are knocked off the branches by means of long Bamboo poles and are then picked up by women and children. After drying in heaps, the Nuts are separated from the husks, and the shells are then broken either by hand or machinery and the kernels extracted. The different forms do not appear to be kept separate in the gathering and shelling, but the kernels are graded for marketing. There appears to be little waste in the island. The shells of the Almonds even are carefully saved and used for burning for heating purposes. As soon as the crop is gathered the trees are carefully pruned, all inside wood and broken branches being cut away. All prunings are kept, tied in faggots, and used in the bakeries. The same pruning is carried on with Olives, Carobs and Figs, thus a tree with a dense head is rarely seen When a large Almond branch is broken it is cut off and grafts are inserted the following spring. The trees are usually between twenty and thirty feet high, and always standards with trunks five or six feet high. Most of the trees are said to be white-flowered. So prosperous is the Almond industry at the present time that as old Olive trees die they are replaced by Almonds, and several newly-planted fields of Almonds were noticed on land recently reclaimed from the wild mountain side. A good deal of trouble is taken in preparing places for new trees. Old trees are grubbed up by the roots and holes four to five feet across excavated for the coming planting season."

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*Vol. xxxiv, No. 7, October, 1927.

**Journal* cf the Ministry of Agriculture, Vol. xxxiv, No 7, October, 1927.

Legacies to Gardeners.—Mrs. Anna Mary Rodger, of St. Andrews, Wimborne Road, Bournemouth, who died on October 7, bequeathed £200 to her gardener, Mr. J. W. Payne, "in remembrance of my late husband." —Mr. R. K. Sampson, of Elin Court, Ringmer, Sussex, who died on July 12, left £100 to his gardener, Mr. J. Sales, if still in his service.

Potato Erstling.—A contributor to *Moller's Deutsche Gartner-Zeitung*, of November 11, writes enthusiastically of a Potato named Erstling, which appears to be the earliest of all "garden" varieties, as, with ordinarily good cultivation, it yields, as early as June 20, a good crop of saleable Potatos. The flesh is yellow in colour, the eyes flat, the form a round-oval; flavour and cooking qualities excellent. The foliage is short, so that the variety is eminently adapted to cultivation in a cold frame, and by this method tubers the size of a hen's egg may be obtained in the middle of May. The variety is said to be little known, as it only came into commerce last year, but curiously enough, it is stated to have originated in England. If this is so, it can scarcely have been named here, or must have be re-christened for the German market. In Holland it is also becoming popular. Its great advantage lies in the fact that as it crops early the ground becomes available for a succeeding vegetable crop.

A Commemorative Forest for Palestine.—It has been decided to plant a large forest in Palestine to commemorate the fourteenth anniversary of the Balfour Declaration. This forest, which is to be known as the Balfour Forest, is to be on an extensive scale and, at least, fifty thousand young trees of various sorts will be planted. This work is expected to help the development of Palestine by improving the amenities and creating new industries. The entire cost will be borne by the Jewish National Fund.

Mr. James G. Quinn.—For many years Mr. James G. Quinn, gardener to Captain R. B. Brassey, at Cottesbrooke Hall, Northampton, has excelled as a cultivator of Chrysanthemums and fruits, and this season he won the Holmes Memorial Cup for Japanese Chrysanthemums at the National Chrysanthemum Society's exhibition. Like so many other successful gardeners, Mr. Quinn began his horticultural education under his father, in this case at Little Houghton House, where he stayed about four years. He then went to Audley End, Saffron Walden, serving under Mr. J. Vert, and gaining a large and varied experience with plants and fruits grown under glass. Anxious to gain further experience, he next obtained a post as journeyman, under glass, at Cranfield Court, Bedfordshire, where Carnations and Chrysanthemums were grown particularly well. Two-and-a-half years later, he left Cranfield and became foreman at Hinchingbrooke, Huntingdon, where the gardens were well-kept and improvements were often being made. His next position was that of foreman and decorator at Birr Castle, Kings County, Ireland, where a good collection of plants was grown, but his stay in the Green Isle was very brief, for after about nine months he was offered the post as foreman under glass at Castle Ashby, Northampton, under Mr. A. R. Searle. The glass department at Castle Ashby was extensive, plants and fruit being grown in large quantities, both for home use and for exhibition, consequently the experience gained during his two years' stay has been of great value. On leaving Castle Ashby he became general foreman at Longleat, the seat of the Marquis of Bath, which is noted for its extensive vineries and fine Grapes. Decorations were also a feature, plants in great variety and quantity being grown for that purpose, especially stove plants. Five years later, Mr. Quinn became gardener to Captain R. B. Brassey, whom he has served for the past seventeen years, at Copse Hill, Bourton-on-the-Water; Heythrop Park, Chipping Norton; and Cottesbrooke Hall, Northamptonshire, the greater part of the time being spent at Cottesbrooke. Since he came to Cottesbrooke the garden has been re-made and a new range of glass erected. Outstanding features at Cottesbrooke are the Shrub Garden and the Wild Garden, and these have been developed during the past seven years. These occupy a long, narrow stretch by a brookside, a space formerly covered with scrub and weeds. During the past seven years, Mr. Quinn has taken a keen interest in exhibiting, and has met with considerable success, gaining many prizes and several cups for Chrysanthemums, Sweet Peas, fruits and vegetables at various Shows, including the National Chrysanthemum show, the National Sweet Pea Show, R.H.S. Fruit Show, and Northampton, Bedford, Oxford, and Nottingham Chrysanthemum Shows.

MR. JAMES G. QUINN.

Elm Disease in Belgium and Holland.—We learn with regret that many of the beautiful Elm trees which formerly adorned the outer boulevards of the city of Brussels have perished of disease, and it is proposed to replace them by a hardier kind of tree, probably by the Plane. In Holland, where Elms are used for a similar purpose, there has been a similar experience, and a number of remedies have been tried at Rotterdam, Wageningen, and the Hague, with little or no success. In the latter town it is calculated that three-hundred-and-fifty trees have died, or are at the point of death, this year alone, and it is proposed to cut them all down, and to refrain for the future from planting Elms in public places.

Chrysanthemums at Roath Park, Cardiff.—At the present time the Chrysanthemum show at Roath Park is a source of pleasure to a large and interested public. The plants are very tastefully staged in a long, span-roofed conservatory. Very few large, Japanese varieties appear in the group, but the effect does not suffer; indeed it is gratifying to observe how beautiful a group of well-grown Decorative sorts and Singles may be. In some instances the varieties of these sections have been disbudded, in others the sprays have been allowed to develop in a natural manner. The following varieties are worthy of special mention:—Cranfordia, Jean Pattison, Octobre, Market Red, Rev. W. E. Catlow, Mrs. Gelly, Miss Joyce Strowgler, K. Bowman, Patching, Florrie King, Mrs. G. Monro, Edith Cavell, F. A. Tofield, F. W. Ladds, F. Townsend and W. Turner. The Chief Officer of Parks (Mr. A. A. Pettigrew), has provided a beautiful display and given pleasure to thousands of the citizens of Cardiff.

November Flowers in an Oxfordshire Garden.—Mr. J. Butler, Rose Cottage, The Moors, Kidlington, sent us a box of beautiful flowers, with the following note:—"I am sending to-day (November 8) a box of miscellaneous flowers, principally Roses. The yellow cluster Rose named Danae, so seldom mentioned, is well worth a more prominent position; it is a strong grower and always in flower; with me it commenced to flower in May and has never been out of flower up to the time of writing, and even now it is full of flower buds. I have plants six feet to seven feet high, which have been a striking feature in my front garden all through the summer. If carefully pruned, this Rose makes a splendid pyramid, and when in full flower is a very noble plant. In another part of the garden Danae makes a splendid hedge, and I am planting Moonlight for the same purpose. I am inclined to think Pax would also adapt itself to hedge-cultivation. What a splendid Rose is Madame Butterfly; I have placed this at the top of my list of dwarf Roses; it has shapely blooms, its habit is good, and the foliage fine. Flowers of Madame Abel Chatenay, Lady Pirrie, Independence Day, and many others are sent, and all have been excellent this year. Hugh Dickson, I find, does best with me if allowed to ramble. I intended to send a bunch of double and single Begonias and also two varieties of Dahlias, but we had a sharp frost on November 7 which finished them. Mignonette Sutton's Giant I cannot speak too highly of. The Hydrangeas I have in tubs, stood outside, are flowering for the second time. I am sending a few heads of bloom. The variety Bouquet Rose has gone out of flower; Emile Mouilliere promises to be a good subject when it gets stronger; both these are now planted outside, and if they survive the winter, doubtless they should be excellent next year."

Association of Parks and Botanic Gardens Superintendents.—Many of our readers will be pleased to learn that a meeting under the auspices of the London and District Branch of the above association will take place in the Lecture Room of the R.H.S. Hall, Vincent Square, on Tuesday, November 29, when an address will be given by Mr. W. W. Pettigrew, General Superintendent of the Manchester Parks, on the "Aims, objects and advantages of the Parks Superintendents Association." The chair will be taken by Mr. A. J. Ashmore, of Peckham Rye Park, at 7.30 p.m., precisely.

Ghent Quinquennial Show, 1928.—Preliminary arrangements for the next Ghent Quinquennial Exhibition were made at a meeting held in the Palais des Floralies on Sunday last. British, French and Dutch representatives were present, together with M. Charles Pynaert and M. F. Spae, respectively President and Chairman of the Foreign Sections; M. Lucien de Cock, General Secretary, and M. Henri de Wilde, Designer and Director of the exhibition. The several sites and spaces were selected for the foreign sections, and we believe that in each case the sites will be entirely different from those occupied five years ago by the British, French and Dutch horticulturists. After the meeting, the representatives were entertained to lunch by the Comte André de Kerchove, President of the Ghent Society and Governor of West Flanders. We understand that His Majesty the King of the Belgians will be an exhibitor in April next, and will open the exhibition, and that the Lord Mayor and Sheriffs of the City of London propose to visit Ghent on the occasion of the Floralies.

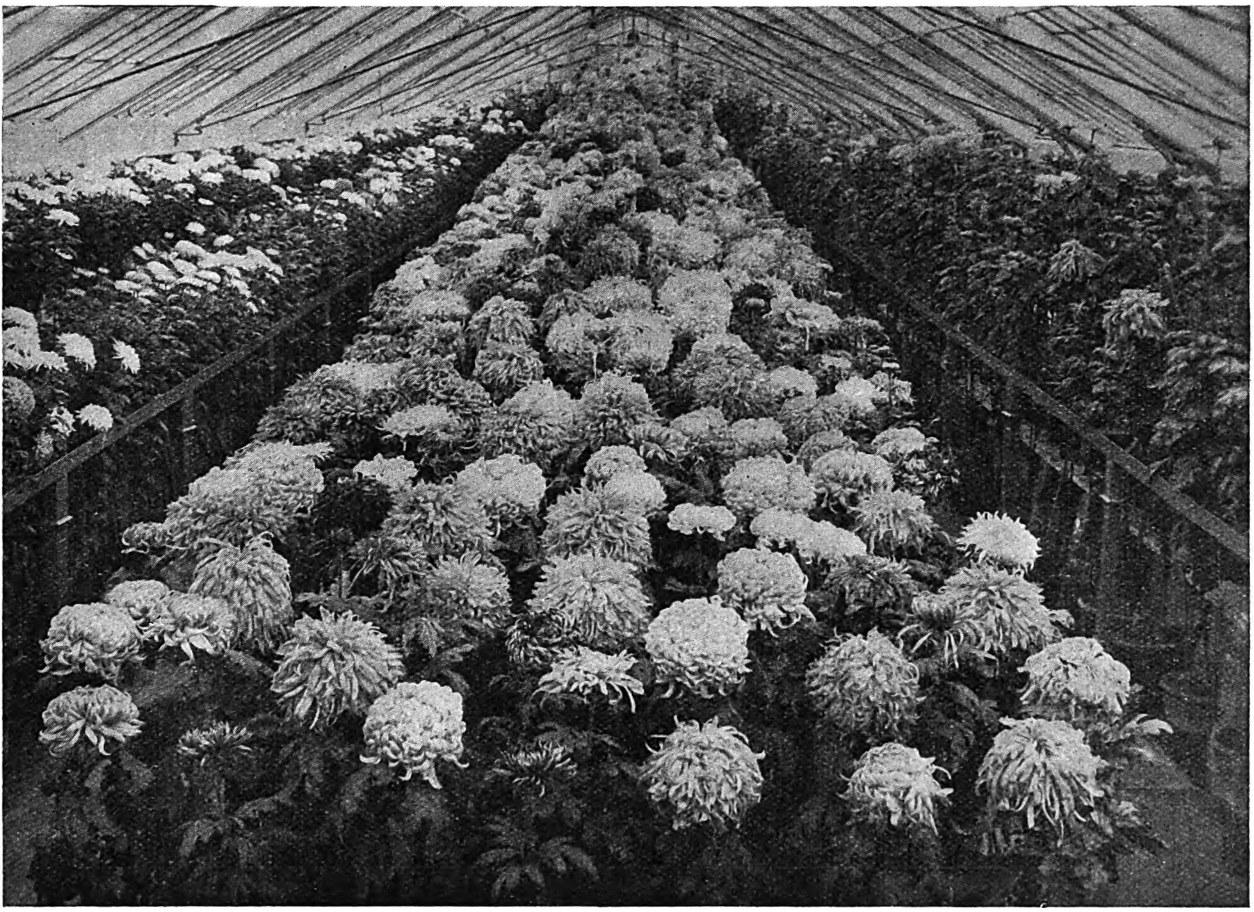

FIG. 190.—CHRYSANTHEMUMS AT OAK HILL PARK, ACCRINGTON.

Front-Garden Competition in Berlin.—The competition for the best and most attractive front garden, which was organised in Berlin this year, has been a great success, and has resulted in a considerable improvement in the appearance of the residential quarters of the city. Ten special prizes, two hundred first prizes, and about two-hundred-and-fifty certificates have been awarded; the prize-giving ceremony took place on Sunday, November 13, in the large hall of the Teachers' Union in Alexanderplatz. The ceremony was followed by the exhibition of a film of horticultural interest.

Chrysanthemums at Oak Hill Park, Accrington.—Abundant evidence is reaching us of the popularity of displays of Chrysanthemus now provided by the public authorities in various parts of the country. A large conservatory at Oak Hill Park, Accrington, is at present filled (Fig. 190) with these attractive autumn flowers, and the exhibition is attracting thousands of visitors. Many of the best varieties of recent introduction are grown, and prominent sorts represented by especially fine blooms include Ajax, Autumn Tints, C. Davis (new yellow), Belle Chinoise, H. J. Jones, Julia, Red and Yellow Majestic, Marjorie Woolman, Mrs. A. Holden, Mrs. E. Sweet and James Baxter. Mr. H. Boyd, the Superintendent, has not only grown these Chrysanthemums skilfully but he has arranged them in a very attractive and pleasing fashion.

Appointments for the Ensuing Week.—MONDAY, NOVEMBER 28: National Chrysanthemum Society's Floral Committee meets; East Anglian Institute of Agriculture's lecture. TUESDAY, NOVEMBER 29: Royal Horticultural Society's Committees meet; National Dahlia Society's annual meeting. WEDNESDAY, NOVEMBER 30: London Gardens Guild lecture; Iris Society's annual meeting and dinner. THURSDAY, DECEMBER 1: Linnean Society's meeting. FRIDAY, DECEMBER 2: Accrington and District Chrysanthemum Society's meeting. SATURDAY, DECEMBER 3: Blackburn and District Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Destroying Slugs.*—It has been represented that quick-lime strewed in rainy weather is effectual in destroying slugs; this is, however a mistake, inasmuch as they will escape from it when it is in a wet state, with but little trouble; it will then only annoy them. If the weather is dry repeated dressings may prove destructive, but it will be found that even when it is in a dry state, they can escape with their lives, casting off a coating of slime, with the dry lime sticking to it. A trial of a few thrown into a pot containing dry quick-lime will confirm the accuracy of this statement. To bury them stirred up with it is, we admit, sufficient to "settle" them. We know of nothing better calculated to eradicate them than in autumn to lay thin slices of fresh Turnip hollow, by placing one end on a stone, or concave, Cabbage or Savoy leaves laid amongst crops infested with them, or elsewhere (by the side of paths is most convenient), examining them on a mild and moist evening, two hours after dark, or at day-break; thousands may thus be secured, and if repeated occasionally they may be extirpated altogether, from either the garden or the farm. In spring, where a pond or brook is at hand a brood of young ducks will devour them in good earnest, but they must be trained to their work, which is easily effected by giving them half proportions of corn, or any food to their liking, several times in the day, first near the pond, next a rod or two distant, accompanied with the usual kindness or chucking at feeding times; then again, further and further, here a little food and there a little; thus by degrees they will traverse constantly and regularly a whole garden, or field, or farm, in search of food and slugs, provided those small rations of food are regularly laid here and there daily, without omission. By the usual wheedling and feeding at night they are easily enticed to their resting place, where, if preferred, an entrance just large enough for them to creep out at, may be left for their exit at day-break, in order that they may search for food. Care must be taken that the entrance is not large enough to admit dogs, foxes, etc. If they can be trusted out, they will prefer to rest and thrive best in the pond or sedges by nights, to be off betimes in the morning, when the slugs are out feeding. *Hardy and Son, Maldon. Gard. Chron. November* 27 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Pleiones.—The Indian Crocuses, as these Orchids are often named, are of easy culture, and few, if any, of our smaller Orchids make a more beautiful display in their respective seasons. Considering the quantity of flowers they produce, and their beautiful effect for decorative purposes, it is a wonder they are not more generally grown. The flowers last a considerable time in good condition, even when used for room decoration, whilst the individual blooms are useful for buttonholes. P. maculata, P. lagenaria, P. concolor, P. praecox and P. Wallichiana, are now passing out of flower, and the green shoots from which the blooms have sprung will, under proper treatment, develop into strong, flowering pseudo-bulbs. So soon as the flowers have faded, the new shoots will already have produced from their bases a number of small, white roots, and as these roots lengthen rapidly, no time should be lost before undertaking the necessary repotting; if the operation is delayed many of the roots will be injured, as they are easily broken, and thus a severe check will be given at a critical period. Shallow pans are the best receptacles, as they are easily suspended from the roof, and the plants need plenty of light, especially during the short days of winter; but care must be taken that they are hung far enough away from the glass to secure them from harm. The pans should be well-drained to permit the free passage of water through the material when the plants are in full growth. Pans of eight inches to ten inches in diameter, holding about eighteen to twenty pseudo-bulbs, will be suitable. Instead of dividing the growths, it is advisable to place them in clumps, allowing the pseudo-bulbs to almost touch each other, as a much better effect is then produced when they are in bloom than when the pans are scantily filled. The potting material should consist of equal parts of fibrous loam, peat and Sphagnum-moss, well mixed together, with the addition of a fair quantity of coarse silver sand. Over the crocks place a layer of moss to prevent the finer parts of the compost entering the drainage, then fill the pan to within an inch of the rim with the compost, on which the plants should be placed, the spaces between them and the sides of the pan being filled with compost. When filling in around the bulbs it is desirable to work in some heads of Sphagnum-moss, as growing moss provides wholesome moisture around the plants.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Celeriac.—The stump-rooted Celery, when fully grown, should be carefully lifted, have its leaves trimmed off and the roots stored in sand in a cool shed. Treated in this way the roots are kept free from frost and will remain fresh and sound for a considerable period. Where a large quantity is still growing in the open, it will be wise to protect the stock with Bracken, leaves or straw.

Endive.—After this date Endives cannot be relied upon in the open, and any that are still growing there should be lifted and placed closely together in frames, unless some other means of protection can be afforded; wattle hurdles with mats placed over them will be suitable, while old lights that can be spared, raised sufficiently over the plants and darkened with straw or litter, answer the purpose, and will blanch as well as protect the heads.

French Beans.—Where an average night temperature of about 60° can be maintained, successive batches of this useful vegetable should be sown, either in pots or frames. They should be grown as near the glass as possible so to catch every ray of light. Where Beans are now carrying crops very careful watering and gentle feeding must be practised. An occasional syringing on warm days will prove beneficial. Close the house early in the day to husband all solar warmth possible. Keep the atmosphere of the house fairly humid and be always on the watch for white fly and thrips, vaporising the structure so soon as these pests are seen. In houses where plenty of head room is possible the climbing varieties of French Beans are very productive. Where pods of these varieties are growing freely, light dressings of Clay's Fertiliser sprinkled on the surface of the soil, and watered in with water at the same temperature as the house, will prove invaluable for assisting further production. Ventilation should be given whenever the outside conditions are suitable, taking care that cold draughts do not enter the house.

Cold Frames.—Parsley, Lettuces, Endives, Carrots, Cauliflowers, etc., growing in cold frames should receive an abundance of air, removing the lights entirely during suitable weather. The occupants should also be kept scrupulously clean, and have the soil stirred between them frequently. Slugs should be sought for and destroyed. During very severe weather the lights should be well covered at night with mats or other protecting material.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Violets.—Since being placed in the frames, Violets have made excellent progress and are now producing flowers in fair quantity. Violets dislike coddling at any time, therefore keeping the frames closed continuously will only end in failure. The lights should be drawn back so far as possible whenever the outside conditions will allow, and at night, except during frost, ample ventilation should be afforded. Remove all decaying foliage, frequently loosen the soil between the plants, keep all runners removed as they appear, and watch carefully for mice and slugs, which must be trapped.

Winter-flowering Begonias.—These are now making a bold display, and in the case of plants that have been removed to the conservatory, a little care is necessary with regard to watering. B. Gloire de Lorraine and its varieties are more suitable for foggy areas than B. Optima and B. Mrs. Heale, but these delightful winter-flowering Begonias should be grown in districts that are not liable to fogs.

Camellias.—Plants that have set their flower buds thickly should be disbudded. Take care that the plants do not suffer for lack of moisture at the roots, otherwise bud dropping will result; on the contrary, too much water is liable to cause similar trouble.

Propagating Chrysanthemums.—Certain Chrysanthemums that are grown to produce large exhibition flowers demand a long season of growth. These include such varieties as Majestic and its sports, Mrs. G. Drabble, Wm. Rigby, Victory, Queen Mary, Princess Mary, and Mrs. J. Gibson. In their case, early propagation is necessary. The cuttings may be inserted singly in small pots, or three may be inserted in a small sixty-sized pot. Where space is limited, the latter method will be found most convenient, and provided the young plants are potted off singly so soon as roots are formed, equally good results will be forthcoming as with those rooted singly. The pots should be filled with an open compost, and when the cuttings are inserted a watering should follow immediately to prevent the cuttings from flagging. Stand the pots of cuttings in a propagating frame in a cool house. It is a great mistake to attempt to root Chrysanthemums in heat. Many good varieties are very shy in producing cuttings, and when this is the case it is a good plan to shake the greater part of the soil from the old roots and repot them in a light compost; the newly-potted plants should then be grown in a minimum temperature of 56°, when they will, in most cases, produce strong shoots suitable for use as cuttings.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Orchard Trees.—The present is a very suitable time to deal with fruit trees in orchards. Thin out the heads where they are crowded with useless wood. This work is frequently left until after the leaves have fallen, but it may be carried out safely soon after the fruits have been gathered. In the case of old and much neglected trees, do not thin the heads excessively, but remove some of the crowded branches and repeat the operation next season. By keeping the tree moderately thin both crop and quality will be greatly improved. Some attention must, however, be paid to the habit of the tree. Varieties with rather weak and pendulous growth should not be too severely thinned, otherwise, when a very heavy crop is produced a goodly portion of the fruits may become much bruised during windy weather. When pruning large trees it is a good plan to have one man in the tree sawing out the branches and another below the tree giving directions to the pruner. After pruning, dress the land with farmyard manure, or replace the top spit of soil with fertile loam and bone-meal.

Plums.—In order to obtain the best results from Plum trees it is necessary that the trees should possess plenty of fibrous roots growing in suitable soil and sufficiently near the surface to be influenced by the sun's rays and an occasional top-dressing. There are numerous good varieties of Plums that succeed well when planted on east or west walls, grown either as cordons or trained fan-shape. Where the land lies somewhat low the borders should be raised above the level of the surrounding ground. The drainage should be good and the soil sweet and fertile. Add plenty of old mortar, a little bone-meal and burnt earth, and if the soil is of a less fertile character, decayed manure should be added. There are several good Plums that deserve a space against a wall. Belle de Louvain, Early Transparent, Coe's Golden Drop, Kirke's, Jefferson, Victoria, Oullins Golden Gage, Washington, Grand Duke, Denniston's Superb and Monarch, the last a very large late cooking Plum, are all suitable. Do not nail in too much wood when training the trees, or employ more nails and shreds than are necessary, but retain young growths at intervals as these usually crop well the second season. Be careful not to bruise the bark when nailing, and see that all old ties are removed if they are injuring the bark.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P. Ford Manor, Lingfield, Surrey.

Figs.—Early Fig trees have not experienced a good season for ripening their wood, but they should now to be in condition for starting about the end of November, that is where ripe fruits are needed in May. Pot trees are most in favour, and for very early fruits they are preferable to permanent trees—not that the crops they produce are better—as they may be moved as needed, or changed in the event of failure. Trees for starting in the present month must be thoroughly ripened and well-furnished with embryo Figlets; they should be fairly root bound—a condition which can only be secured by repotting very early in the autumn. If these essentials are not present, an early start will be useless. See that the drainage is correct. Carefully clean the stems with tepid, soapy-water taking care that the young Figlets are not scratched in the process. If worms are suspected a watering with lime-water will dislodge them. Bottom-heat being an important factor, the pits should be deep enough to allow about two feet of fermenting material composed of fresh leaves and stable manure. Place pots or bricks beneath the pots so as to raise the plants well up to the light. Frequent moderate waterings are necessary to get the soil and roots into good condition by the time the fermenting material becomes warm and the house is closed for starting the Figs. Those wishing to commence forcing may secure good pot trees from the leading nurserymen, and as such trees should improve each year they are a good investment.

Figs in Successional Houses.—Trees in confined borders should be cleansed and put in working order. If the wood is young, soapy water and Gishurst compound should be used to clean the trees; all suspicious parts on old trees should be treated with pure Gishurst compound. When the trees have been dressed and trained the house may be kept dry and cool until the time arrives for forcing, and then the roots must be thoroughly moistened and fermenting material introduced. Trees which are grown in cold houses and only mature one good crop each season, may be kept in good fruiting condition by annual root-pruning, the use of sound, but not over rich, compost, thin training, and as good a roasting as possible by sun-heat in the autumn.

Cucumbers.—Late plants put out after October Melons will be rather more backward than usual, but will come in useful when the plants now in bearing are on the wane. Much depends upon the start, as these plants will keep on growing in a minimum of 60° and a maximum of 70°, with a brisk bottom-heat of 75° to 80°, especially if fermenting material is the main source of heat. Such plants should need very little pinching until the commencement of the year.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Plants for Shady Places.—In shady situations, such as under trees, it is often a difficult matter to keep the ground furnished. In the case of large trees on lawns nothing looks better than grass growing right up to the trunk, and this may generally be achieved by keeping the bottom branches clear of the ground. The surface soil should be pricked over and a top-dressing of fresh soil raked in; by this means and using a mixture of grasses that flourish in the shade one may generally keep the ground furnished. In other positions where it is desired to have a carpet of evergreen plants, Ivy may be relied upon to grow, even in dense shade. Ruscus aculeatus (the Butcher's Broom) also succeeds under the shade of trees, and it makes a good, bold edging for shrubberies, while the smaller R. hypoglossum may also be used for the same purpose; this also makes a good carpet under tall-growing shrubs. Berberis Aquifolium is invaluable for furnishing areas under thinly-planted trees, and by shortening the longer shoots it may be kept to any desired height. Euonymus radicans and its variegated variety are invaluable for carpeting shady places under trees. These make a good, bold edging to paths in the less dressed parts of the garden, but when used in this way they usually require clipping twice a year. The Periwinkles—Vinca major and V. minor—are also commonly used for furnishing shady places, and are excellent for covering steep banks; there are several varieties of each, including variegated forms. Lonicera pileata is a newer plant that is excellent for shady spots. Sarcococca humile, S. ruscifolia and S. Hookeriana—the last only hardy in the south—with small, white, sweetly-scented flowers, might be more generally grown, especially in the partial shade of large shrubs. Gaultheria Shallon and G. procumbens are also excellent for the same purpose. Hypericum calycinum is invaluable for covering banks, or for planting in shady places, but to keep it close and thick it should be cut over with a scythe every spring. Where larger-growing subjects are required, Box, Yew and Holly are always useful, but Aucubas and Laurels are much too freely planted in many gardens, and they do not present the same cheerful appearance as our native evergreens. Funkias, Anemone japonica and its varieties, as well as many other hardy herbaceous plants do fairly well in the shady margins of shrubberies; Lily-of-the-Valley will also succeed in similar situations and should be planted more freely in woodlands. Epimediums also do well in partial shade. Many of the stronger-growing hardy Ferns are seen at their best in shady spots, and with them may be associated a host of bulbous and other plants.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Pruning Bush Fruits.—The pruning of Gooseberries and Currants may now be completed, and where the former are required to produce only a medium crop of large fruits for dessert purposes, close or spur-pruning may be practised, but where the aim of the cultivator is to produce a heavy crop, either for home supplies or for marketing, it is a mistake to remove too many of the current season's shoots, unless they are overcrowded. Remove all branches that are near the ground, as these are weighed down when carrying a crop and the fruits become splashed and unsightly during wet weather; after this, treat the bushes in much the same manner as recommended for Black Currants, by removing old, exhausted shoots and retaining so many of the young ones as space will allow. If Gooseberry mildew was prevalent the tips of the current season's shoots should have been removed during September, and the bushes sprayed with a fungicide, such as Burgundy mixture, or a solution of potassium sulphide. While pruning Black Currant bushes, a close watch should be kept for symptoms of reversion and big bud, and if the latter is found, the infested plants should be marked and either removed entirely or treated during the spring months to a regular course of spraying with lime sulphur.

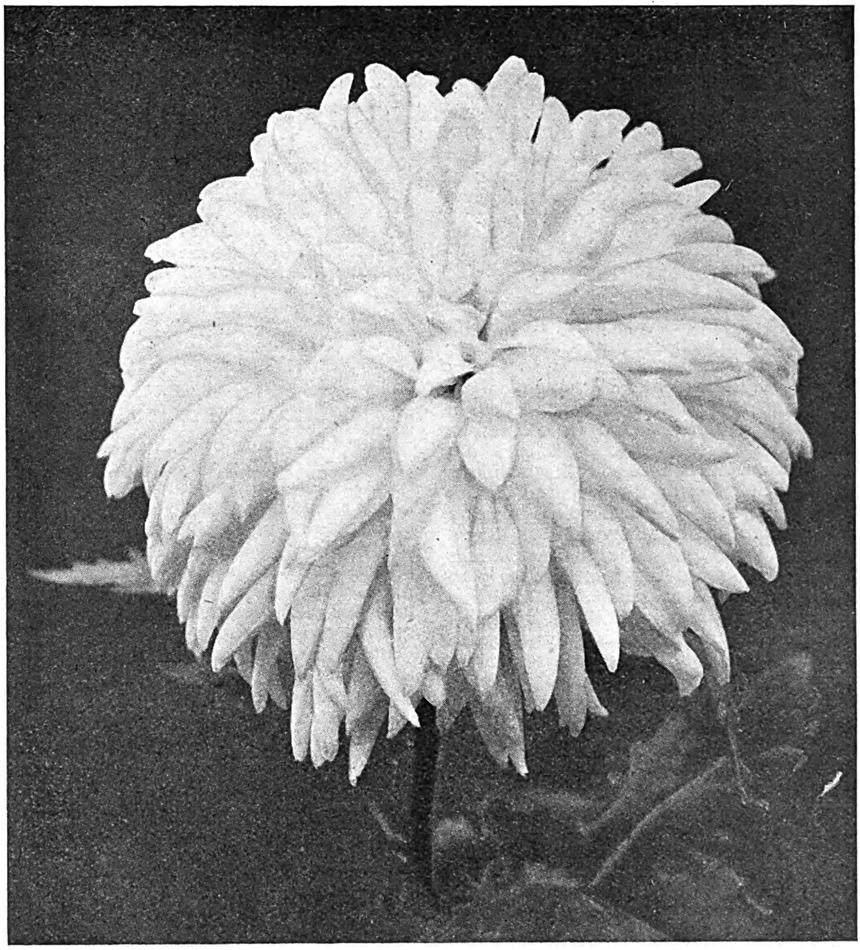

FIG. 191.—CHRYSANTHEMUM ALBION.

N.C.S. First-Class Certificate, November 14. Flowers white. Shown by Mr. H. Shoesmith, jun. (see p. 414).

Artichokes.—Globe Artichokes require additional protection to that supplied by their own foliage, and this, in the form of strawy manure, should be placed around the plants at an early date, removing all spent flower-stalks at the same time. Jerusalem Artichokes have been severely treated by the autumn winds, and their long stems are lying at every angle. These should now be cut down to a foot or two above the ground and cleared away. Where the roots are in great demand a supply may be lifted and stored in sand, but they are best left in the ground and lifted as required.

Rhubarb for Forcing.—Crowns of Rhubarb which have been prepared by lifting and exposure to the recent frosts may now be placed in the forcing house, packing them in as closely as possible with a mixture of soil and manure around them. A good watering with tepid water should be given to settle the bed, and a moderate temperature of 45° to 50° maintained for the first week or two, until growth has started, when, if necessary, the temperature may be raised and the growth accelerated, but Rhubarb of the best quality is produced when only a moderate temperature is maintained throughout, and plenty of luke warm water supplied when necessary.

Tigridias.—Except under the most favourable conditions, it is necessary to lift Tigridias annually and store them in a dry place for the winter, but where they are a success they should not be disturbed; the most suitable position for them is a well-drained border at the foot of a south wall or in front of a greenhouse. These gorgeous flowers are worth a little trouble, for although the individual blooms are short-lived, a succession is produced from the same spathe, and the splash of colour made by a good clump is most effective. When other means of flowering Tigridias successfully have failed, they may be grown in pots or pans in a cold greenhouse, where the roots may be kept dry, without disturbing them, after the foliage has died down.

BULB GARDEN.

EUCOMIS.

The species of Eucomis are natives of the Cape, and although they are not the most effective or graceful members of the Lily family, they are deserving of cultivation in the outdoor garden on account of their broad, handsome leaves, more or less spotted with purple at the base, and their tall, cylindrical spikes of blossoms, surmounted by a crown of leaf-like bracts. Like so many other Cape plants, the Eucomises are hardy on light soils. The genus includes about eight species. The foot of a south wall is the ideal position in which to grow them, but the roots will require protection during the winter months.

E. undulata has leaves about eighteen inches long, with flower spikes three to four feet high. E. punctata is the largest, with leaves three feet long, while E. regia is quite dwarf, with racemes of flowers one foot high. E. nana is the smallest kind I know and spreads its foliage horizontally. E. amaryllidifolia, as the name indicates, has Amaryllis-like foliage. E. bicolor, a native of Natal, introduced about 1878, is a handsome, robust species; it obtained an Award of Merit from the Royal Horticultural Society in June, this year, and was figured in *The Gardeners' Chronicle* (Fig. 12, p. 23). *W. J. P.*

BULBINELLA HOOKERII.

Still frequently called by its now superseded specific name of Chrysobactron, Bulbinella Hookerii is not too well known to the average owner of a garden devoted mainly to hardy flowers. A goodly number of years ago, as the writer recollects, the plant was a good deal in favour and was often included in collections of hardy plants. In some cases it was carefully tended, but in others it received the ordinary treatment of other hardy flowers, and had a comparatively short life. It was looked upon by some as tender, and I remember when visiting a keen plantsman's garden, seeing two specimens of this plant growing in a frame preparatory to being put out for the summer. This was unnecessary, but the fact remains that a great many losses have occurred, probably from want understanding the conditions called for by B. Hookerii. It is really a bog plant, and the fare provided in the ordinary border is generally uncongenial, hence the frequency of the losses. It is worth considering by those who can give it a bog or even a moist border or a position at the base of a rock garden, into which the rainfall from the higher parts can flow and form semi-boggy conditions. It needs sunshine.

B. Hookerii is a pretty Asphodel-like plant, two feet or so high, more or less, and having long foliage, and spikes of yellow flowers. There appear to be two forms, at least, one answering to the above description and another which is taller and has larger spikes and individual flowers. The latter, to which no name has been given, is very scarce. Plants may be raised from seeds or increased by division. *S. Arnott.*

DOUBLE TULIPS.

So long ago as 1665, double Tulips were grown in England, and a few varieties are figured in books of the period. The double sorts grew in favour slowly, and even in the *Dutch Florist*, written by Nicholas Van Kampen and Son of Haarlem, and published in 1763, it is mentioned that only two varieties are listed in the firm's catalogue—La Couronne Imperiale and Le Mariage de Ma Fille. During the closing years of the eighteenth century, double Tulips became more popular, and in a Dutch catalogue of that period no fewer than seventy-five sorts are listed; this was at a time, however, when there was a singular craze for double flowers of all kinds.

Throughout its history, however, the double form of the Tulip has never attained universal popularity; trade catalogues usually contain a much abbreviated list and flowers are rarely staged at exhibitions.

In favourable seasons, double Tulips are very effective in flower beds, but during inclement weather the somewhat heavy blooms are prone to injury; as pot plants, several of the varieties are superb, and Murillo and Safrano (syn. Tea Rose) may be cited as good examples. During recent years new varieties have rarely appeared.

A selection of early-flowering double Tulips should include Couronne d'Or, orange-yellow; Safrano (syn. Tea Rose and Brimstone), yellow, suffused salmon; Murillo, white and rose-pink; Couronne des Roses, deep rose and white; Salvator Rosa, deep rose-pink and blush; Imperator Rubrorum, red; Don Carlos, perhaps the best red; Vuurbaak, orange-scarlet; Tournesol, red and yellow; Lac Van Haarlem, lilac-violet; La Candeur, pure white, outside petals at first suffused green; and Schoonoord, a very beautiful pure white flower.

The later-flowering double varieties form a small class and, admittedly, not a very successful one; they flower with the earlier Cottage Tulips and are, for the most part, characterised by immense flowers and weak stems. The colours are bright and attractive; a small collection would consist of Bleu Céleste (syn. Blue Flag), with tall stems and large flowers of a good shade of pale purplish-blue; Yellow Rose, a tall, yellow self; Mariage de Ma Fille, with crimson and white stripes; Count of Leicester, deep yellow; and La Belle Alliance, white ground, feathered and striped purple. Groups of these late-flowering double Tulips usually prove attractive in the hardy flower borders, and so used, they are more satisfactory than when grown in beds. *Ralph E. Arnold.*

FLOWER GARDEN.

CALCEOLARIA INTEGRIFOLIA.

The true value of this Calceolaria is seldom recognised, owing, no doubt, to the mistaken idea that it is only suitable for use as a greenhouse or bedding plant. This is by no means the case, as although liable to being killed in very severe winters, being a native of Chili and Peru, it will survive for quite a number of years if planted against a wall, preferably one with a north or east aspect, where it will not start into growth too early and is sheltered from the full heat of the summer sun. Under these conditions and given deep, loamy soil, it will form a bushy plant three or more feet high, producing strong, erect, branching growths, which are thickly clothed with leaves, and terminated by large clusters of small, rich, golden-yellow flowers borne well above the foliage and produced freely throughout the summer and autumn.

Soon after the introduction of this Calceolaria there was considerable confusion amongst the authorities regarding its correct name. It was given in both the *Bot. Mag.* and *Bot. Cabinet* as C. rugosa, while the *Bot. Reg.* in describing it under the name of C. integrifolia considered it a tender annual—a mistake due, no doubt, to inexperience of its habits. However, it is given in the *Index Kewensis* as C. integrifolia, under which name it is now commonly grown.

There are apparently two distinct varieties of it, namely var. viscossima, a sticky, hairy form with sessile leaves, and var. angustifolia, which is figured in the *Bot. Mag.*, t. 1,083, and described as having longer, more coarsely serrated leaves and longer flower stems. *A. G. F.*

HARDY FLOWER BORDER.

LARGE-LEAVED SAXIFRAGAS.

The broad-leaved Saxifragas belonging to the Megasea section are handsome foliage plants of an evergreen character, and have a decorative effect at all seasons of the year. All are strikingly beautiful when in flower in the spring and early summer, and many of them have the additional charm of vivid autumnal colouring in their foliage. They are excellent subjects for certain positions in the rock garden, as their evergreen leaves are valuable for furnishing the garden during the winter months, while planted in large, bold groups in the wild garden or woodland they are very effective. The cultivation of this group of plants presents no difficulties; they thrive in almost any soil and position. Propagation is readily effected by division, either in the autumn or spring, while most of the species produce seeds freely and may be increased by such means.

S. ligulata is one of the earliest to flower and is liable to injury by frost if grown in an exposed position, hence a sheltered spot should be chosen for it. It is a Himalayan plant and has a tendency to lose its leaves during the winter, but its flowers are very beautiful and freely produced in large trusses in April. The variety speciosa retains its foliage better, which helps to protect the flowers in their early stages of growth.

S. cordifolia is one of the most robust species, with large, handsome leaves and dense spikes of rosy-red flowers produced at the end of April. It is of great value for planting in large masses in the wild garden or woodland, where it makes a most effective display in the spring with its flowers, and again in the autumn with its brightly-coloured foliage.

S. crassifolia is closely related to S. cordifolia, but is not quite so robust. It bears large panicles of rosy-purple flowers in April and its somewhat smaller leaves take on a rich colour in autumn. S. Milesii is a Himalayan species which does not flower until the end of May. It has very large leaves and the flowers are pure white.

S. purpurascens is a beautiful plant but does not grow quite so freely as others of this group. It has richly-tinted foliage and produces graceful panicles of purple flowers in early June. S. orbiculare has somewhat rounded leaves, is of compact growth and bears panicles of deep red flowers. S. Leichtlinii is the tallest member of the group and has large crimson leaves and beautiful, rose-coloured flowers.

WINTER TREATMENT OF LAWNS.

The extraordinary mildness of October and early November necessitated the mowing of lawns until a much later date than usual, but now that the last mowing of the season is past some thought should be given to the after treatment of the lawn.

The lawn-mower has been in regular use during this moist season, and as a consequence the surface of lawns will be tightly compressed as a result of constant mowing and rolling. It will thus be necessary to institute surface cultivation, and in the first place a thoroughly hard sweeping is of great assistance. This should be followed by vigorous cultivation by means of a sharp-toothed rake on small areas, or a mechanical, spiked roller on large areas, to effect perforation of the turf and assist aeration of the roots, leaving an ideal surface for the application of a subsequent top-dressing.

During summer, while growth is active, it is difficult to apply any other top-dressing than an artificial manure, but lawns benefit immensely from a top-dressing of more bulky material, and it is while growth is nearly dormant during the winter that such an application becomes practicable.

The precise nature of the top-dressing may be varied according to the texture of the local soil. If the lawn rests on heavy clay a substantial proportion of sharp, clean sand mixed with the compost would be advantageous, but on light, sandy soils this would be unnecessary. In either case, the compost should consist largely of decayed organic matter, such as that derived from leaves, garden refuse or farmyard manure, sufficiently decomposed to pass through a fairly fine sieve. If a concentrated fertiliser is mixed with the compost, preference should be given to one of organic source, such as finely-ground hoof and horn meal, which decomposes slowly and has a lasting effect.

It is a mistake to apply very heavy top-dressings at any one operation. To obtain the greatest benefit from these dressings it is essential that the holes and crevices in the turf made by previous cultivation should be thoroughly and evenly filled. This can only be done effectively by vigorously brushing the surface with a good broom, and very heavy dressings would make this impossible. *A. P. C.*

ORCHID NOTES AND GLEANINGS.

LAELIA ANCEPS.

The sunless season experienced has not been to the liking of this useful, winter-flowering Orchid, and in many cases the plants have flower spikes in a backward condition, especially the late-flowering, white varieties; therefore it is advisable to give them every encouragement by maintaining a regular temperature and allowing them all the light possible. The coloured forms, which are always the first to expand their blooms, and which are so useful at the Christmas season, are of a more robust nature and not in such a backward condition.

The flowers open when the plants have quite finished their growth, therefore the drier atmosphere necessary to preserve the flowers is not detrimental to the health of the plants, as would be the case if growth continued during the flowering period. There is often a gummy, sticky, exudation from the apex of the spike, and this should be removed with a wet sponge, otherwise the upper bracts will stick to the flower buds and prevent them opening properly.

The long spikes render it necessary to place the specimens on the plant stage until the flowering season is over; any spikes that are near the glass should be tied down out of harm's way. The supply of water at the roots should be reduced, but the rooting material must be kept sufficiently moist to allow the proper development of the flowers. *J. T. B.*

SPATHOGLOTTIS.

The genus Spathoglottis has not, hitherto, enjoyed a very full measure of popularity and yet it is an interesting one, and contains one or two undeniably pretty species. The species are natives of China, India, the Malay Archipelago and of some Pacific islands; they are terrestrial Orchids, and although this wide geographical distribution suggests variations of temperature under cultivation, all will thrive in an intermediate temperature, except S. aurea, which occurs within the equatorial zone and responds best to the warmth of the East India house. These Orchids grow well in fibre and chopped Sphagnum-moss, to which should be added a small portion of loam, some crushed brick and sharp sand; they enjoy plenty of water during the growing season and a subsequent well-defined period of rest.

Spathoglottis aurea was discovered on Mount Ophir (Malacca) by Thomas Lobb, in 1849; the leaves are large, plaited, the scape tall, and the rachis many-flowered. The flowers are yellow, the sepals streaked with orange on the back, and the lip spotted with red. S. plicata, a species of bold growth, has purplish flowers, and is a native of Java, whence it came in 1844. S. Fortunei is a smaller-growing plant with yellow flowers, suffused and spotted with red; this species is abundant in Hong Kong, and was first collected by Fortune in 1844 for the Horticultural Society of London. S. Vieillardii possesses ovoid pseudo-bulbs; the plaited leaves are very large and the scapes tall; the sepals and petals are white, the lip pale reddish-brown with some yellow and red spotting. This fine Orchid was introduced from the Isle of Pines in 1853, and was collected subsequently in New Caledonia.

The hybrid S. aureo-Vieillardii is a desirable plant, and another pretty hybrid is S. edinensis (pulchra × Fortunei).

Other good species are S. Petri, discovered by Mr. Peter Veitch in the Fiji Islands in 1876; the flower is rosy-purple and the callus of the lip yellow, spotted with red. S. rosea was introduced from the Philippines in 1837. The pretty S. Colmanii aurea is occasionally seen, as is the interesting S. Lobbii, from Sarawak, with bright yellow, red-spotted blossoms; the last-named plant was introduced somewhere about 1875, reputedly by Messrs. Rollisson.

The species and hybrids of Spathoglottis are, for the most part, summer-flowering, and the best examples I have known were grown in an intermediate temperature with abundant atmospheric moisture and moderately heavy shade during bright periods. *Ralph E. Arnold.*

INDOOR PLANTS.

BEGONIA VERSCHAFFELTII.

This interesting hybrid Begonia is the result of a cross made many years ago between B. manicata and B. carolinaefolia, and although it is a great improvement upon its parent species it is seldom met with nowadays.

Where the true plant is grown it invariably attracts attention. The large, ovate, acutely-lobed leaves are a soft olive-green colour, conspicuously marked with red veins on the upper surface; the lower surface, stems and petiole are a transparent, reddish-bronze. The whole plant is thickly covered with short, stiff, reddish-pink hairs. The flowers are produced in large cymes well above the foliage and have petals of a soft rose colour merging to white at the margins.

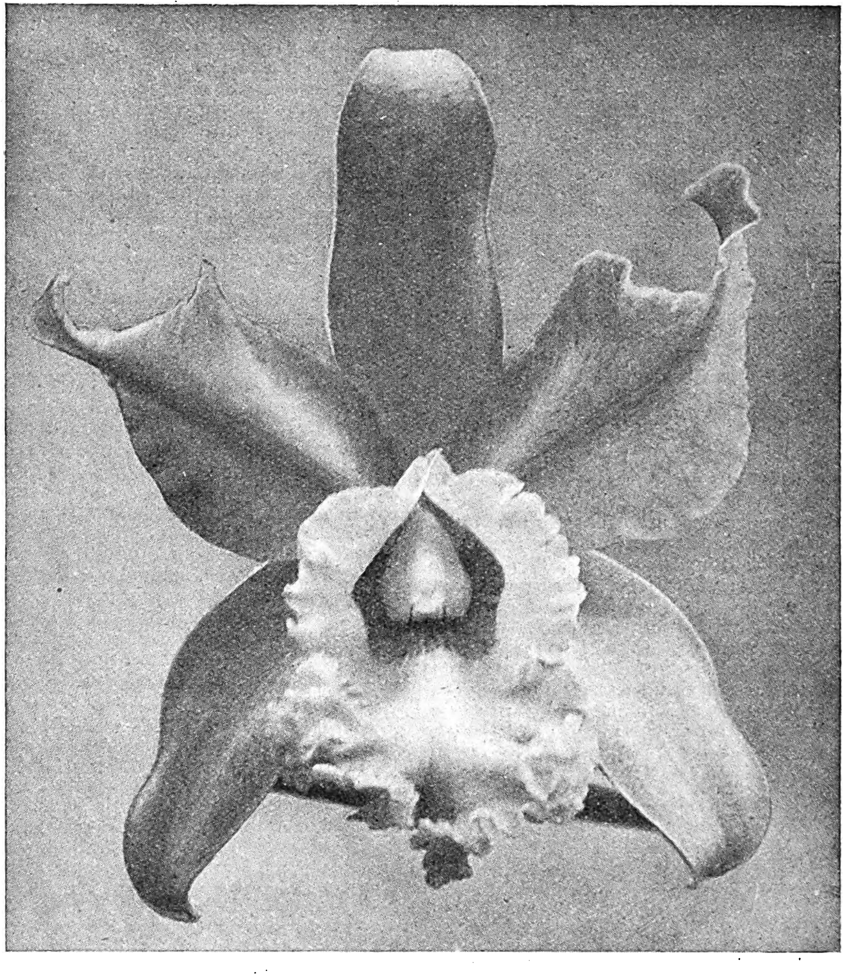

FIG. 192.—LAELIO-CATTLEYA YUKON VAR. UNIQUE.
R.H.S. Award of Merit, November 15. Flowers cerise and orange-yellow.
Shown by Messrs. Sanders. (see p. 412).

B. Verschaffeltii grows about two feet six inches high, and continues to flower throughout the winter in a cool greenhouse. Apart from the daintiness of the flowers, the whole plant, when viewed with the light behind it, makes a most pleasing effect. *R. K.*

ERLANGEA TOMENTOSA.

The grey foliage, tomentose stems and greyish-mauve flowers of this plant harmonise delightfully. During November and December the plants are useful for the decoration of a cool greenhouse or conservatory, and may be safely utilised for house decoration.

Cuttings, inserted in spring, offer a ready means of propagation, but during the summer months, the plants derive much benefit from a sojourn in the open air; an ordinarily good compost of loam, leaf-soil and sand will meet the requirements of E. tomentosa and absolutely cool treatment is requisite. The average height of first-year plants is about two feet. *E. A.*

ALPINE GARDEN.

ARTEMISIA CAMPHORATA.

Most of the Artemisias or Wormwoods, are noted for the fragrance of their leaves. The odour of A. camphorata is very distinct, yet pleasing, and quite appreciated, even by those who knew not the plant but who have been asked to touch it and smell their fingers afterwards. This special fragrance is, I think, unique in the genus, most of whose species have a distinct aromatic odour. But A. camphorata has another claim upon us in its foliage, which is highly pleasing, of a silvery hue, and arranged flat-ways and deeply cut. Although from Spain, it appears quite hardy, and the writer grew it for years on an elevated piece of rock-work in poor, dry soil. A. camphorata is increased by cuttings, and is quite a pretty shrublet, although its greenish flowers are not of much value. It grew eventually about eighteen inches high with the writer *S. Arnott.*

HYPERICUM FRAGILE.

So many Hypericums, or St. John's Worts, offer themselves for us to select from when adding plants to our gardens that we are liable to overlook some of the most attractive. In our selection, H. fragile should be borne in mind, whether we eventually decide in its favour or not, but most folks who have cultivated it will be prepared to say that it ought not to be absolutely rejected, if not actually preferred. Soon after it came into commerce some of us were disposed to place it at least on an equality with the exquisite H. reptans, but after experience of older and larger plants modified our views, and we are hardly prepared to accord H. fragile such high standing. But it is a very fine species, indeed, and where it thrives well, is a picture with its carpet of deep green leaves, branching out in all directions and decked by comparatively large flowers, larger and of a deeper gold than those of H. Coris or H. reptans, recognised as among the elite of the smaller St. John's Worts. It grows only a few inches high, but forms a spreading carpet. I have had plants more than a foot across.

In cultivation I have found H. fragile most attractive in a moraine or on a sloping bank of the rock garden. It flowers for a long season and produces seeds; which, with cuttings, afford easy methods of increase. One thing must, however, be mentioned. This is that old plants of H. fragile may succumb during a hard winter, and the writer has lost plants several times from the trials of an inclement season. H. fragile should have a free soil with leaf-mould and sand added, and may be grown in sun or shade.

GERANIUM ARGENTEUM.

ONE of the finest passages in the late Mr. Reginald Farrer's *English Rock Garden* is that in which he pictures in vivid language the beauty of Geranium argenteum, which he called "one of the loveliest things in nature," as seen in the grassy lawns of Mount Baldo. The passage is too long for quotation in this short note, but the fact that it was written by such a keen and often caustic critic and lover of flowers justifies me in bringing this plant once more before readers interested in the best alpines.

Mr. Farrer tells us that the plant should have starvation fare if it is to be as fine as on its native mountain. "Specially poor and stony soil" is what he recommends to prevent G. argenteum from growing too strongly and losing much of its charm. Yet even those who have not observed the lesson to give the plant poor fare will wax eloquent in defence of its beauty should this be called in question. Its leaves are charming in form and are delightful with their silvery sheen, and the exquisite little wild Rose-like flowers of lovely tint combine to make it a gem among alpine gems. There is a white variety also, but I prefer the type.

There is one point in which I have found my experience differ from that of Mr. Farrer. He states that G. argenteum usually sows itself freely in the garden. I have never found any self-sown seedlings in my garden. A stony, poor soil in a sunny place will suit this gem best, and with full sun the owner should be rewarded with many flowers from May to August. Propagation is effected by portions of the crowns struck under glass, or by seeds.

MORISIA HYPOGAEA.

WHEN the exquisite little Morisia hypogaea made its reappearance in British gardens a good many years ago, it was with some surprise that folks learned that it had formerly been in cultivation but had disappeared for a considerable period. Its beauty is so great that it appears passing strange that it did not even seem to be cherished in the great botanic gardens.

That this delightful plant was figured by Sweet (*British Flower Garden*, second series, t. 290), and even in a most imperfect manner by Mrs. Loudon in her *Ladies' Flower Garden of Ornamental Perennials*, Vol. I, plate 18, and then went absolutely out of cultivation, appears somewhat of a mystery. This may, perhaps, be accounted for partly by the fact that it occasionally dies off without any evident cause, but, even with this failing, it should have been retained even when a flood of bedding plants swept away so many good border and rock garden flowers.

The plant is the only known member of the genus and bears the name of Professor Moris, who discovered it in the mountains of Sardinia, whence it was introduced in 1834. It is difficult to describe in sober prose the varied charms of the Morisia. It forms a low tuft of glossy leaves, resembling somewhat in form those of the Dandelion, but infinitely more beautiful. These rest on the soil, and above them, but almost sessile, the bright yellow flowers appear, which by their beauty make the plant highly attractive. These flowers appear early in summer and are produced in long succession.

In cultivation, M. hypogaea appears to prefer a dry, well-drained, sandy soil in a sunny place, but I have found the plants greatly improved by good soakings of clear water during dry weather in spring and summer, keeping the water from the foliage. It may be increased by seeds, which should be sown so soon as ripe. The seeds are buried in the ground, as in the case of the Cyclamen, and should be carefully searched for so soon as they are likely to be ripe. A still more reliable method of increase is by means of root cuttings. These should be cut into lengths of about an inch, inserted in sandy soil in pots under glass and just slightly covered at the apex and watered carefully. A large number of plants may thus be secured from a good specimen without injuring it in the least.

POTENTILLA TONGUEI.

A HANDSOME little alpine Potentilla of dwarf habit and with attractive flowers is that named P. Tonguei. It is one of the hybrids raised about sixty or seventy years ago, and, although frequently offered in catalogues, it is not common in private rock gardens. It has long been familiar to the writer, who first saw it more than forty years ago in a large collection of the best alpines of that time. It is of dwarf, rather trailing habit, and not more than three or four inches high. It comes into flower in June, as a rule, and lasts in flower until August comes to an end. It grows well in loam, leaf-soil and sand, and may be planted in a sunny or half-shady position not overhung by trees. P. Tonguei is increased by division of established plants or by cuttings. It is quite hardy, but I have seen it suffer greatly if exposed long to continued drought without occasional supplies of pure water.

THE WALNEY ISLAND CRANESBILL.

WHAT has for long been a popular rock plant, but which appears to be less plentiful than before, is Geranium lancastriense, the Walney Island Cranesbill, understood to be a form or hybrid of G. sanguineum, but quite distinct in many ways. It is a very dwarf plant, only rising a few inches above the soil, with smallish leaves and wonderfully large, flesh-pink flowers, charmingly veined. It is quite hardy, but should be grown in light soil and in a sunny position. It was found on Walney Island, on the Lancashire coast, and has been in cultivation for a goodly number of years. I believe that a now departed alpinist searched the island for varieties and found some plants, but, so far as I can ascertain, these were never sent out and have probably been lost. I have been informed that some of them were very pretty. G. lancastriense is easily increased by division, and I have seen self-sown seedlings in my garden, and these kept true to the parent, all but one, which may, however, have been a hybrid between G. lancastriense and one of several other hardy Cranesbills in my garden. *S. Arnott.*

WALL GARDENS.

THE clothing of a wall with attractive plants is a fascinating enterprise fraught with much interest, but its success depends on many factors. The furnishing of an existing wall is a much more difficult problem than that of planting a wall about to be built. Moreover, the purpose of the structure, whether it serves as a retaining wall with an earth slope behind providing it plentifully with moisture, or whether it is merely a dry buttress unable to collect moisture except from rainfall or atmospheric conditions, must influence the planter in the choice of plants.

That even the dry buttress wall is capable of sustaining some plant life is often demonstrated by Nature. It is no uncommon thing, for example, to see a colony of our native Linaria Cymbalaria growing freely on the side of a brick or stone wall where one would imagine none of the finer plants could exist, yet it is obvious that the material of which the wall is built must retain sufficient moisture to enable the plant to draw its sustenance from it. When planting such a wall, however, much may be done to assist the plants in establishing themselves by making holes in the material and filling them with rich compost containing plenty of humus.

For such walls no plants surpass the Sempervivums, but once they are established many other plants succeed to a remarkable degree, and it is quite possible to attain success with many of the species of Dianthus, Antirrhinums, Artemisias, Achilleas, Aethionemas, Cheiranthus, Onosmas and Hieraciums. The plants used for the purpose should be young and small. Autumn planting is preferable to spring planting, as the plants have a chance of establishing themselves before the dry conditions of summer arrive. Where difficulties arise in establishing young plants it is sometimes possible to begin by pressing portions of earth containing seeds into crevices in the wall.

Furnishing a retaining wall—with a bank of moist earth behind it—is a much less difficult problem, and makes possible the use of a far wider range of plants, but here also success is much more certain if building and planting are carried on together, for it is important that the roots of the plants are laid well back to give them access to the moisture behind—an almost impossible task when the wall is already built.

Many plants may be used with good effect for clothing such walls, some of which seem to do better in this position than in any other. The Acaenas, Aubrietias, Phlox subulata and its many varieties, Androsace lanuginosa, Dryas octopetala, Fragaria lucida, Gypsophila prostrata, Lithospermum prostratum, several of the Polygonums, the creeping Thymes and the Helianthemums, are excellent subjects for draping the wall with curtains of foliage and flowers. Some of the Saxifragas, such as S. sancta and S. apiculata, make fine cushions, while in certain positions where conditions are not too dry, even those of the mossy kinds thrive. Acantholimons, Erodiums and Silenes succeed and make excellent clumps, while such old favourites as Arabis albida, Alyssum saxatile, Iberis gibraltarica, I. sempervirens, Cerastium tomentosum, Nepeta Mussinii and Santolina incana grow with remarkable freedom on a wall and cover large areas in a comparatively short time. *W. A.*

TREES AND SHRUBS.

BERRY-BEARING TREES AND SHRUBS.

WHEN planting schemes are being arranged the merits of berry-bearing plants should not be overlooked as they add considerably to the brightness of the garden during autumn and winter. The Natural Order Rosaceae alone includes many species and varieties bearing brilliantly-coloured fruits. Ornamental Crabs are valuable, not only for their brilliantly-coloured fruits, but the fruits are useful for jelly; the best of these are John Downie, The Dartmouth, Victoria and the Siberian Crab (Pyrus baccata), which is also very beautiful when in flower and makes a fine, large tree. Pyrus Aucuparia, the Mountain Ash, is beautiful in flower and fruit; and the new Pyrus Vilmorinii, with rosy-pink fruits, should not be overlooked. Pyrus toringoides, its slender, drooping branches wreathed with small, scarlet fruits, is also very beautiful.

Euonymus europaeus, the Spindle Tree, one of the most attractive of our native shrubs or small trees, is very much overlooked by planters, but the pale scarlet fruits which show the orange-coloured seeds, are very beautiful, while the brilliantly coloured foliage during the autumn is an added attraction. Hippophae rhamnoides, with its silvery-grey foliage and bright orange-red fruits during autumn and early winter is a very charming shrub, but a male plant must be planted with a group of females, as male and female flowers are borne on separate plants.

Cotoneasters include numerous fine subjects, a few of the best being C. Simonsii, C. humifusa, C. microphylla, C. frigida, C. Franchetii, C. horizontalis and C. buxifolia; in the case of the last-named, the birds do not touch the fruits, these remaining on the plant until the following spring. The Crataegus family includes some fine subjects for garden decoration, notably C. Crus-galli, C. Carrieri and C. coccinea. Pyracantha coccinea var. Lalandei is unrivalled for covering walls, or as bushes in the open; unfortunately, the birds are very fond of the fruits, and quickly take toll of them, but seem to have no fancy for the fruits of P. crenulata var. yunnanensis, which produces small, dull-red berries in wonderful profusion, and makes a fine wall covering. P. angustifolia has yellow fruits, but requires the shelter of a wall as it is not over hardy.

Barberries are a host in themselves and our native Barberry is very beautiful when in fruit, while the newer Chinese species and garden varieties provide some fine subjects, some of the best being Berberis Wilsonae, B. verruculosa, B. subcaulialata, B. Prattii, B. brevipaniculata and B. polyantha. Viburnum Opulus is also fine and grows well by the water-side. Symphoricarpus occidentalis and S. racemosus var. laevigata produce their fruits in great profusion. There are many more plants worth planting for their fruits alone, but the short list given will serve to indicate the wealth of available material. *J. Coutts.*

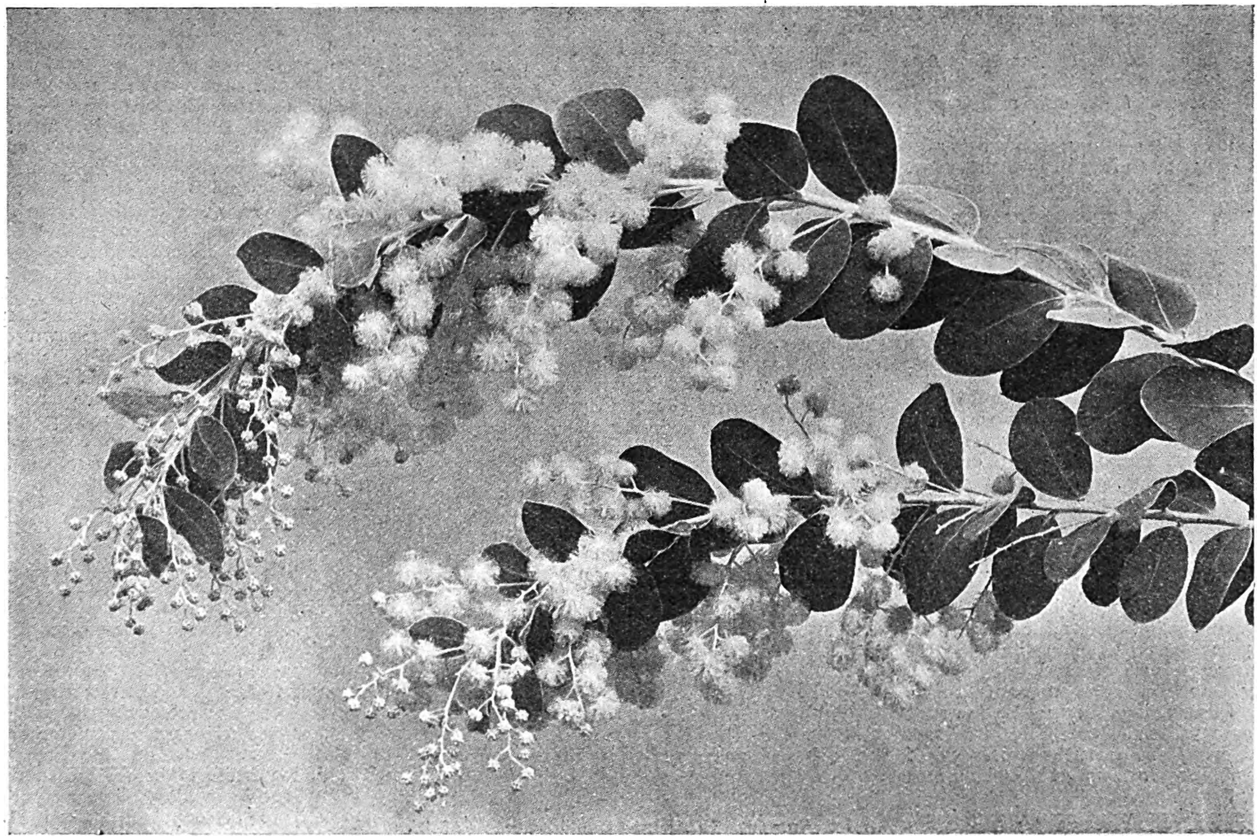

FIG. 193.—ACACIA CUNNINGHAMII.

R.H.S. Award of Merit, November 15. Flowers canary-yellow. Shown by Lionel de Rothschild, Esq., Exbury, Southampton. (see p. 413).

DIOSPYROS KAKI.

THIS deciduous Chinese shrub is a handsome foliage plant, its large, glossy leaves, frequently a foot long and three or four inches wide, being particularly attractive during the summer months. But the object of this note is to draw attention to its brilliant autumnal colouring. It is of vigorous habit and free growth; a specimen planted at the foot of a wall in these gardens in 1916 has already covered an area of two hundred square feet. For a considerable period, and lasting until mid-November, this specimen has been most effective by reason of its intense colour. The beautiful leaves are first a rich orange shade, then they turn to fiery scarlet and deep crimson, giving one the impression of a large, glowing fire in the distance. *W. Auton, Pyrford Court Gardens, Surrey.*

BERBERIS POLYANTHA.

BERBERIS polyantha has become a well-established plant in our gardens and many people have extolled the merits of this easily-grown shrub, which has held its own in face of the numerous species which have been found since its introduction by Mr. E. H. Wilson in 1904. Although Mr. A. E. Pratt originally discovered B. polyantha in Szechuan in 1899, it was left to Wilson to send seeds home five years later, to be followed by a further consignment in 1908. The flowers of this popular deciduous species are produced in June, are yellow, and are borne in long panicles drooping with the weight of from twenty to one hundred blossoms. The fruit is salmon-red in colour. B. polyantha is also valuable for its autumn colouring.

However, the object of this note is to emphasise the variable characteristics of the plant. When raised from seeds great variation will be found in the fruiting capabilities, size of the flower panicles, and size and colour of the fruits. Although the type should grow from six feet to eight feet high, many seedlings are of considerably less stature, with thin, weakly growths instead of the long, stout, arching stems usually associated with the plant. If B. polyantha is to maintain its high place in the list of desirable garden shrubs it is necessary to practice a rigorous selection of seedlings, and thereafter propagate by vegetative means. Heeled cuttings of firm wood strike readily if inserted towards the fall of the year in pots of sandy soil and plunged under a north wall. As with many hard-wooded plants, it is imperative that the soil be rammed hard and made firm round the base of the cutting so that the heel is in actual contact with the compost. *L. B. C.*

ITEA ILICIFOLIA.

THIS somewhat uncommon evergreen shrub thrives in a sandy, peaty soil and, during the autumn months is decidedly ornamental. The long, pendant racemes of whitish flowers are freely produced and are well displayed by the wealth of glossy-green foliage. The examples I have seen are somewhat dwarf in stature, and I am unable to write of the potential height of this shrub. I. ilicifolia is undoubtedly a very pretty and interesting plant for a somewhat favoured situation. The better-known I. virginica, a deciduous species, introduced from North America so long ago as 1744, is characterised by deep green, oblong leaves and small, white flowers freely produced during June and July. *A. C.*

ABUTILON MEGAPOTAMICUM.

THIS remarkable shrub, a native of Brazil, and also known as A. vexillarium, has attracted more attention than almost any other in my garden during the last five years. There are few subjects which bloom with such extraordinary freedom as it does, for, commencing in spring, it does not cease to produce an unbroken succession of blooms until the first frosts of autumn. The flowers, moreover, are extremely showy, being a vivid yellow, set off with a large and inflated blood-red calyx, and these gorgeous objects swing like Chinese lanterns at the tips of slender stalks. The specimen here is the variegated variety, the ovate leaves being tessellated with bright yellow. This may help to explain the fact that although this shrub has been in the same position at the foot of a west wall for a good many years, growth is so slow that it is still not more than four feet in height. However, it flowers with the utmost profusion, and it is so hardy that frosts rarely affect. *A. T. J., Ro Wen, Conway, N. Wales.*

HYDRANGEA QUERCIFOLIA.

A NATIVE of the South-east United States, this fine plant requires a rather sheltered position as it is liable to injury during the winter, although it is seldom killed completely. It forms a rounded bush about three feet in height in this country, though normally it rises to about six feet, producing numerous, stout, woolly growths which die back to the root-stock each winter. The leaves are borne in pairs and are broadly oval in shape, with five or seven large lobes; they are from three to eight inches in length, dark green in colour, the undersides being covered with rough down.

The flowers are carried in terminals, erect panicles up to eight inches in height, the outer sterile flowers being about an inch across, greenish-white when young, changing to a purplish tint with age; the numerous, small, fertile flowers being crowded together in the centre. It usually flowers from June to September, although this year it flowered much later than usual. *A. G. F.*

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CHILI AND THE ANDES.

No. II.—On the Way.

From the comparatively temperate delights of Bermuda we passed on to real tropics, Havana and Panama. Havana looked exquisitely beautiful as we approached it from the sea—a city of white buildings flushed by the light of dawn to a liquid, rosy-amber. But the heart of Havana, when you explore it, is less attractive. The newer, finer parts of the city recall some monster exhibition—Wembley or Earls Court—in three stages: in the making, finished (so far as such shows ever are finished), and ten years after! A medley of pretentious palaces, shanty shops, and building plots, builder-stricken with builder's messes. The older quarters have many fine and picturesque buildings and immense amount of squalour, and a general air of monstrous wickedness.

But the most distressing feature of Havana is the almost total absence of dogs. Motoring for three hours in the city and its environs, and exploring on foot for another three hours or so, I only saw three dogs. One cannot take a good view of a people content to live without dogs! We had rather hoped that by taking a car we might get out into real Cuban country and see a little of its tropical wildness, but our chauffeur had definite ideas of what we ought to see, and firmly kept us to the extensive suburbs. These are set in a strange scrub-country where countless black buzzards wheel overhead in an endless saraband of wide, sweeping circles. There are no houses in these suburbs of Havana, only palaces; large palaces, middle-sized palaces, and some quite little ones; nightmare palaces of mad millionaires, one can only suppose, each more fantastic than the last. I had always thought Le Touquet could boast some fairly bizarre architecture, but compared with the suburban palaces of Havana the wildest excesses of Le Touquet are pure Tudor!

These palace gardens were small, well-kept, and full of tropical splendour, planted, for the most part, in a dull, stilted manner, or, at any rate, the intention shown in the planning was dull. Soil, climate and the plants themselves, however, combined in a splendid exuberance to defeat the dullness of design. Where Palms and Bananas, Cannas, Hibiscus, Codiaeums, Strelitzias and such-like flourish amazingly a garden cannot be wholly dull!

Here, for the first time, I saw in its full glory what is probably the finest flowering tree in the world, the Flamboyant (Poinciana regia). I saw Flamboyants in Bermuda, but they had nearly finished flowering and showed only a stray splash of blossom here and there as a hint of what they might do when really trying. Yet, even thus, I thought the Flamboyant, whatever it might be as a flowering subject, the finest foliage tree I had ever seen. Superficially it has the appearance of a large, spreading Acacia, with pinnate leaves larger than any Mimosa, of an indescribably rich and beautiful velvet-green. Apart from beauty of form, the foliage has a quality of tone and texture which puts it in a class by itself, and "Flamboyant" it is aptly named. Its flowering suggests the flowering of a Horse Chestnut, the flambeaux of blossom being borne in the same profusion all over the tree's surface. But the individual flowers are larger, and the inflorescence larger, looser, more widely spreading—and of a fiery cardinal-red colour.

One of the show places of Havana is the "Tropical Garden," and to this our chauffeur took us during our suburban wanderings. We approached it through the back premises of the largest brewery I have ever seen, and found that it is owned by the brewery and run as a public garden. The public are admitted free, and at various points in the grounds are neat, little, open-air bars where excellent iced laager beer is served free of charge! The gardens are well patronised. They have considerable natural advantages; bold, cliff-like outcrops of rugged rock and a placid river, with wide pools at whose margins grow great clumps of Water Hyacinth (Eichornea crassipes), and they were planted with a fair collection of tropical trees, Palms, Ferns and flowering plants. Unfortunately, none of the trees or plants are labelled, whilst in every part of the garden are virulent outbreaks of grottoesque "ornament," bridges, arbours, pergolas and nameless excrescences in rustic stucco and concrete. However, it is a free show, and one should not look a gift grotto in the mouth, especially if it dispenses free beer!

The last thing we did in Havana was to visit a "saloon" near the quay-side and drink glasses of iced Cocoanut milk from fresh, green Cocoanuts. Very good and refreshing it was, and vastly superior to the insipid milk one gets from ripe, imported Cocoanuts. I feel that I have given rather an unpleasing impression of Havana, but then it is only the passing impression of a passer-by who put himself in the hands of a casual taxi-driver, and so may have missed the best things. What might a Cuban see of London who did the same thing? St. Pancras Hotel, an ex-premier's residence in Russell Square, the Albert Memorial, and possibly Highgate Cemetery.

There was one good happening, however, in Havana. I met Rupert, and Rupert has joined the expedition. I met him a mile or two out of town, hurrying along in a very busy, purposeful manner, with a small, brown winkle-shell on his back. Directly my shadow fell across him he flashed into the shell and shammed dead. In less than thirty seconds he began to stir, and when I stooped to pick him up, he went again. Rupert is the smallest thing in Hermit Crabs I have ever seen, and makes an engaging and very portable pet. He lives in a cigarette tin, takes a sea-water bath daily, but refuses to eat, though I have tried him with every delicacy from the cold buffet—except caviare—and including a dead fly. *Clarence Elliott.*

RHODODENDRONS AND LIME.

In August, 1914, at the instance of the late Sir Isaac Bayley Balfour, whose interest in the subject had been originally aroused by Mr. George Forrest and remained unabated up to the time of his death, I began an experiment in the cultivation, or, as it would be more correct to say, in the growth of Rhododendron species in the calcareous soil of my then garden on the hills of east Berkshire.

The initial stage of the experiment has already been described in *The Gardeners' Chronicle*,* and it is unnecessary to repeat it in detail. It is sufficient to record that the Rhododendrons furnished for the purpose by the Edinburgh Botanic Garden were either tiny seedlings or juvenile plants, of which the majority had no earth about their roots, and that no especial preparation was made for them. Indeed, the plants reached my hands before there had been an opportunity of preparing for them, and were placed in beds in which Anemone japonica, Astilbe grandis, Michaelmas Daisies and such like had been grown for cutting. The ground had been trenched some years before, and though in a kitchen garden, the place was too shady for vegetables, and so had not been cultivated in the accepted sense of the term. The soil was typical of that part of the Chiltern country—a rather sticky, hungry loam, overlying the chalk, shallow, and with a superabundance of flints. It was not in any sense an ideal soil for such an experiment, for apart from its high chalk content, it was not mechanically in so good a condition as might have been wished. In after years it was easy to see that the experiment would have been fairer to the Rhododendrons and more conclusive to those interested in it if adequate preparation had been made for the plants; but at that time neither the full interest of the subject nor its possibilities had dawned on me, and at the back of my mind there was always a lurking suspicion—born, no doubt, of a knowledge of the traditionally calcifugal character of Rhododendrons—that in any case the experiment was foredoomed to failure.

At that period (1914), too, Sir Isaac Balfour's views on the subject had not crystallised, nor had his enthusiasm reached the stage at which it became infectious. He had previously been impressed by Mr. George Forrest's insistence on the fact that the Rhododendrons of the Yunnan Highlands (1) grow *on* and *in* limestone, often without humus about their roots, and with the latter among the crevices of the rocks; (2) by the explorer's conviction that "when the limestone country is left behind, Rhododendrons (in general) and Primroses are left too," and he did not share the opinion of those who, in face of Mr. Forrest's assurance to the contrary, held that the Rhododendrons of Yunnan grow in spite of the lime and in humus which, they argued—and still argue—must always be present in quantity sufficient to support Rhododendron life. Sir Isaac felt that the association of Rhododendrons with limestone over so huge an area presented a physiological problem of novel and immense interest, the solution of which would be found in research. Two years before, in one of his Masters Memorial Lectures,* he had indicated the lines he thought research should follow, and had thrown out tentative suggestions as to a possible change in the habit of the fungus and mycorrhiza, which, as Dr. Rayner's brilliant researches have shown, are associated with the root growth of certain Ericacae. But he was not convinced, and as the time was not ripe for the marriage of research in the lavatory with controlled experiment in the garden, he welcomed the opportunity I was able to afford him of helping to probe the matter empirically.

To me, therefore, at the time, it was rather more a question of how long the plants would survive conditions so entirely different from those in which their wild progenitors flourish than of much else, and it was not till some years afterwards, when I realised how tenacious of life some of the Rhododendrons were, that my enthusiasm was aroused. It must be explained, too, that the experiment could hardly have been undertaken at a more unpropitious time, for while it began in the week following that in which Germany declared war, it had to be concluded in 1921, when conditions were only beginning to show signs of a return to the normal. During the seven years' interval, anything like serious cultivation or systematic attention was out of the question, and the plants had to take their chance. It was not possible to do more than irrigate the ground in dry weather (with water which, incidentally, contained a high proportion of chalk (23° of hardness), and keep the beds reasonably mulched with leaf-mould to which a liberal allowance of chalk was added. It will be observed that what with the chalk in the ground, in the water, and in the leaf-mould, there was literally no escape from it for the Rhododendrons; the chalk was undoubtedly overdone, and the wonder is that any plants survived so needlessly drastic an ordeal.

After the trial had been in progress for three years I was able to report to Sir Isaac Balfour that broadly, the plants might provisionally be divided into four groups, as follows:—(1) Those to which chalk is death within a comparatively short time; (2) those which tolerate it and which, while to all appearance healthy and showing no sign of giving up, make but slow growth, possibly because they are naturally slow growers; (3) those which flourish; and (4), those which, though growing apace, are poor in colour, *i.e.*, yellow. R. anthopogon, as well as R. argyrophyllum, R. Hunnewellianum and R. Wiltonii, have places in this group.

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* January 29, 1916, p. 65.

*Drought and Gardening. *R.H.S. Journ.* Vol. 38, p. 206 (1912).

In the first group are found the Himalayan and Japanese species, such as R. Hodgsonii, R. arboreum var. Campbelliae, R. campylocarpum, R. camelliaeflorum, R. bullatum, R. Dalhousiae, R. dilatatum and R. Metternichii, which Sir Isaac Balfour had included in the original consignment, and as was only to be expected, they soon died. Among the western Chinese species in the second group are R. adenogynum, R. cephalanthum, R. calophytum, R. Delavayi, R. insigne, R. moupinense and R. sinense. Of the species which fall into the third group of flourishing plants, we find R. Augustinii, R. Balfourianum, R. ciliatum, R. campylogynum, R. Davidsonianum, R. decorum, R. dicroanthum, R. Hanceanum, R. haematodes, R. lutescens, R. longesquamatum, R. micranthum, R. oreodoxa, R. pachytrichum, R. polylepis, R. rubiginosum, R. oleifolium* and R. taliense. It may be explained that the gradual change in the fourth group of plants cannot have been due to the roots finding their way out of the balls, because none of them had any worth mentioning to begin with; and long before the leaves began to change colour and finally to whiten, the mat of superficial roots had extended into the surrounding soil. This was proved again and again by temporarily lifting the plants.

Sir Isaac Balfour's observations on the position at the end of the third year were as follows:—"I note with interest that of those Rhododendrons which have so far come through successfully, many are forms belonging to the same series—thus: Augustinii, Davidsonianum, Hanceanum, lutescens, polylepis, rubiginosum, and their doing on lime does not surprise me. Of the others, your Balfourianum is probably not the species, as none of the plants we raised under that name here has so far proved to be correct; it is probably neriiflorum, and that is a species I should not have expected to be lime-loving; I should say the same of ciliatum and decorum. Haematodes I could quite well believe would not mind lime, and I say the same of micranthum and of sino-virgatum, which, by the way, I now know to be the real oleifolium. Oreodoxa, pachytrichum and longesquamatum I should not expect to be lime-loving.

"Of the others, the only one that surprises me in its growth is cephalanthum, for I should have thought it likely to be quite ready to live in lime soil. You will probably find that ambiguum will not object to lime, and the death of villosum surprises me, seeing that its near allies of the Augustinii series are so flourishing.

"I do not know why irroratum is so unhappy, for it has all the looks of a plant that would not mind lime.

"I do not yet get a clue from your experiment, although the results are suggestive, and I shall have to digest them more completely. Meanwhile, you have certainly broken the ground and must continue. As you have been testing the soil you should also test the plants—incinerate a leaf of each and see whether they all show a like boiling up on the addition of acid.

"A three years' guarantee of life in a lime soil will hardly tempt a grower in a lime district to invest largely in Rhododendrons, but if you could establish one for say seven years, I think it would induce many people to make a trial of Rhododendrons who have hitherto been shy of them on account of their lime soil . . . . Much turns on the kind of limestone, and I hope soon to be able to determine definitely what Forrest's limestone is. If it be magnesian the problem takes a very different line."†

In the fifth year the position had changed somewhat in that several species had to be transferred from the third group of flourishing plants to the fourth group of those which, though growing well, bore obvious signs of chlorosis. By that time the experiment seemed to have proceeded far enough in the case of these chlorotic species: there seemed no object in keeping them in the test bed until their leaves were as white as a sheet, and so they were moved to more comfortable surroundings. The species concerned were:—R. adenogynum, R. argyrophyllum, R. Balfourianum, R. pachytrichum, R. moupinense, R. longesquamatum, R. lutescens, R. calophytum, R. Delavayi, R. irroratum, R. trichocladum, R. cephalanthum, R. coombense, R. villosum, R. lacteum of Wilson—as galactinum was then called—R. Watsonii and R. Wiltonii.

In this connection, I reported to Sir I Balfour (November 15, 1920) as follows:—"Now and again I have lifted the plants to investigate the root growth and have noticed what seems to be a peculiarity, in that while the superficial fibrous roots extend a considerable distance round the base of the plants, there is not so much growth below as one would expect, no ball, as it were, and only a rather thin mat of roots. These superficial roots are fed regularly with a mulching of leaf-mould, care being taken to see that a high proportion of chalk is mixed with the leaf-mould. In the case of R. Augustinii, for example, the top roots extend in a marked circle round the plants, the circle measuring as much as two feet on each side of it, or four feet in diameter, though the plants themselves are only four feet high. From what I have seen of similar plants in another part of the garden, it seems as if the development of the aerial roots is greater in poor soil than in richer, and there may be more in this than meets the eye; is it not possible that because of the poverty of the soil the plants derive their nourishment mainly from the mulching, so that there is especial development of the roots at the surface? There is no doubt about the amount of chalk that is added to the mulching, and also no doubt that by the time the mulching is broken down the roots are exposed to the action of light and air; you can see them quite plainly on the surface of the ground like a net-work. In another instance, that of R. insigne, which, as you know, though a small plant, produced its first flower truss in Britain last spring, the growth of late has been marked, and this is the more remarkable as the plant stood still for five years from the commencement of the trial and did not begin to move till about the end of 1919.* In order to make sure that this species had its roots into the surrounding soil, I lifted it recently and found a mass of roots well into the chalky ground all round the plant."

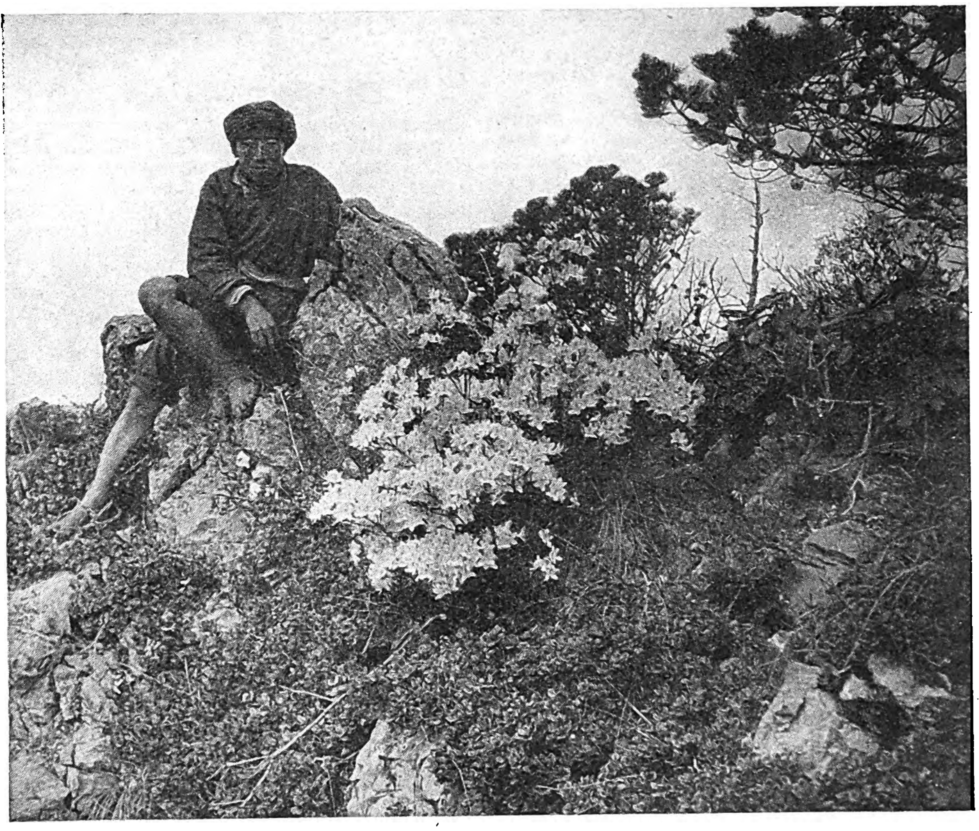

FIG. 194.—RHODODENDRON CHARTOPHYLLUM, FR., VAR. PRAECOX, DIELS.

From a photograph by Mr. G. Forrest, showing this Rhododendron growing on pure limestone formation on the Lichiang Range, alt. 11,000-12,000 ft.

In 1921, when circumstances arose to interrupt the particular experiment, and the plants were moved to lime-free soil in Mr. Charles Scrase Dickins's garden at Coolhurst, near Horsham, certain species which had then been in the chalky soil for seven years seemed to have emerged satisfactorily from what was certainly a drastic trial. These were R. Augustinii, R. ambiguum, R. campylogynum, R. chartophyllum, R. Davidsonianum, R. decorum, R. haematodes, R. Hanceanum, R. insigne, R. longistylum, R. micranthum, R. oleifolium, R. oreodoxa, and R. rubiginosum. Many of these had grown from tiny seedlings to plants of substantial, though varying size, and while in no case was their growth comparable to that of other plants growing in well-prepared, nearly lime-free soil—to all intents and purposes potting soil—that may have been due as much to the poor character of the ground as to the influence of the chalk.

No doubt it would be a mistake to draw any definite conclusions from a small, isolated experiment like this, continued over a comparatively brief period, and conducted under needlessly drastic conditions. On the other hand, an interesting point which emerges from the experiment is that of the Chinese Rhododendrons tested, none seemed so susceptible to lime poisoning as the Himalayan species. Further, it seems established that some Chinese species are more definitely calcifugal than others, while some are sufficiently tolerant of chalk to show no impatience of it after seven years in conditions which are almost immediately fatal to Himalayan Rhododendrons. Whether these

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[*] Then called R. sino-virgatum.

[†] In May last, Mr. Forrest kindly sent me a copy of an analysis of the specimens of limestone he brought back with him from his last journey to Western China. It is as follows: "Calcium (as Ca O.) 50·92%; Magnesium (as Mg. O.) 1·02; Iron and Aluminium (as Fe_2O_3, Al_2O_3) 4·11; Carbon Dioxide 40·07; Insoluble residue 0·29; Moisture (at 105°C.) 1·48; Blackened on heating indicating organic matter; trace of nitrogen detected." Mr. Forrest added that it is dark grey, magnesium limestone, hard and yet decomposing so readily that the streams and rivers of N. W. Yunnan are heavily charged with it, especially in the rainy season.

[*] *Gard. Chron.*, June 23, 1923, p. 351.

species would continue to tolerate chalk for another seven years is a point experiment alone can determine. The experiment will not have been altogether without value if it forms the basis of further trials undertaken under conditions less onerous to the plants and with species which are known to grow on limestone. That would eliminate a number of species which in the particular experiment only cumbered the ground, and would confine it to Rhododendrons from the Tali and Lichiang Ranges and the Muli mountains. In response to my request and without committing himself in any way, Mr. Forrest has been good enough to suggest that the following species may perhaps prove more lime-tolerant than others, and in that sense may be worth a trial by those interested enough to undertake it:—R. blandulum, R. chartophyllum, R. Clementinae, R. fictolacteum, R. globigerum, R. lacteum, R. ledoides, R. lepidotum, R. microphyton, R. sphaeranthum, R. taliense and R. Traillianum. If these are joined to those species which, as indicated above, survived my own experiment, they make up a goodly company of small, medium and large-growing species. To be conclusive the seedlings should be raised *ab initio* in limy soil. This seems essential, because, as research has shown, the welfare of Rhododendrons (among other genera) depends on the existence of a fungus in association with the root of the plant to form mycorrhiza—without the mycorrhiza the plant succumbs. Peat plants are attuned to a certain fungus, and if a plant is moved from an acid soil to one containing lime, the fungus, and consequently the mycorrhiza, ceases to function.

Research alone can tell us whether mycorrhiza play the same part in the welfare of the Rhododendrons of Yunnan as in those of India and America, and whether it is the case, as has been suggested, that in the species of the Yunnan limestone ranges, the fungus, in order to escape from the lime which it finds inimical to its existence, has migrated to the leaves. Some time before his death, Sir Isaac Balfour was all but convinced that this was so, and suggested that as a result of the migration, the plant obtained its nitrogen from the air through the leaves rather than from the soil through the roots. This is no doubt one of several points which research will elucidate, and then gardeners will know *why* one Rhododendron tolerates lime and another does not.

Meanwhile, experiment will show which Chinese species are poisoned by lime, and which are unaffected by it, and it is clearly in the interests of horticulture that such experiments should not be confined to one of the several forms in which lime is familiar to us, but should embrace chalk, oolitic limestone, dolomite and magnesian limestone. There is no lack of either in this country, nor, probably, any lack of careful gardeners on all these formations willing to try the experiment. Only the necessary plants are needed, and with interested amateurs overburdened with seedlings of Chinese Rhododendron species, the material for experimental plantings should be forthcoming in quantity. The matter is one in which the Rhododendron Association can lend invaluable aid.

One such experiment has been initiated on a small scale by Mr. F. C. Stern in his garden on Highdown Hill—a spur of the Southdowns, south of Chanctonbury, where there is no escape from the chalk. Beginning in 1923 with R. rubiginosum, R. oreotrephes, R. cuneatum, R. Traillianum and R. Beesianum, Mr. Stern has since added R. oleifolium, R. rhantum, R. chartophyllum, R. adenogynum, R. Clementinae, and R. Fargesii, all of them species of the Lichiang Range. The plants came originally from Mr. White's nursery garden at Sunningdale, or from friends, and had all been grown in lime-free soil. They differed from the plants used in my experiment as they were not small seedlings, but rather older plants with balled roots.

In the case of this experiment the chalk is as much in evidence as it was in my original experiment, and except that the climate is much softer, the conditions are about as rigorous in the one case as in the other.

It is understood, too, that the authorities of the Royal Botanic Gardens at Kew are conducting a trial of Rhododendrons on magnesian limestone in the north of England.

The photograph of R. chartophyllum var. praecox (Fig. 194) is one of a number taken by Mr. Forrest in 1913 to illustrate the natural growth of Rhododendrons on the limestone rocks of Yunnan. *A. Grove.*

NOTICE OF BOOK.

Greenhouse Plants.

This is the fifth edition of Allendorff's serviceable work*, which speaks well for its popularity and usefulness. For the purpose of the present edition, the text has been entirely revised under the editorship of Herrn C. Bonstedt, the Göttingen horticultural expert, with the assistance of a number of distinguished collaborators. For the sake of those previously unacquainted with the book we may state that the main portion of the work takes the form of an encyclopedia; the subjects are in alphabetical order according to their botanical names and under each name is given the appropriate cultural treatment.

The length of the entries varies considerably, but, on the whole, there is probably an average of two or three names to a page. The book is enriched by a number of excellent photographic illustrations on art paper, which appear to be quite new and to have been taken specially for the present edition.

There are not many reliable works now to be obtained which deal with greenhouse plants only, and we can well understand that Allendorff's volume finds a steady demand. We cannot, however, avoid noticing in it certain defects, which might well be corrected in the next edition. The incidence of the illustrations, for instance, does not seem to bear any relation to the importance of the relative text. We turn to the entry headed "Cyclamen," a genus which the German growers have made peculiarly their own, and in the cultivation of which they are unsurpassed. Although the text occupies nearly seven-and-a-half pages, there is no Cyclamen illustration at all! Nor is this to be accounted for by the theory that Cyclamens are too well-known to need illustrating, for a few pages further on we find an illustration of a house full of Carnations (unnamed). The titles under the illustrations, moreover, have been carelessly applied; for instance, in the section of plants whose names begin with "L" we find a photograph of Levkojen, although this is not a botanical name at all, and the text-section is properly placed under "Cheiranthus." As no page-references are given under the illustrations, errors like these should have been avoided.

Another defect, in our opinion, is the very scanty advice given on the subject of pests and diseases, many quite common pests not being mentioned at all, and those that are mentioned being summarily dismissed with a few words on a suggested remedy, usually without any indication of the proper quantities or proportions to be used (see pp. 47, 244). A number of printing errors have slipped through into the new edition, and some have unfortunately been perpetuated in the index, such as "Warzenkaktus" for Walzenkaktus (p. 272). Rhododendron "Nuttalii" appears on p. 396, and Chrysanthemum "Tramfield" Orange on p. 109. Also, the printers should know that the long "S" is not used in English words, such as "Miss" and that "Prinzess" Mary is not so called. In fact, in the list of Chrysanthemum names, many of which are French and English, on pp. 108-110, there are numberless mistakes, and it would have been worth while for the editor to send for a few reliable catalogues by which to check them. It is a pity that a book of this kind, upon which, evidently, much time and money have been spent, should be marred by defects so easily avoided.

The volume is well printed on good paper, and has a stout, serviceable cover protected by a paper jacket. It is a little on the heavy side, and it is probable that if the next edition has to be enlarged, the publishers will find it necessary to divide the work into two volumes.

COMPENSATION FOR ALLOTMENT GARDENS.

The subject of the right of tenants of allotment gardens to claim compensation is dealt with under the provisions of the Allotments Act of 1922. This Act applies to what are known as "Allotments" and "Allotment Gardens," the former being any piece of land of not more than two acres in extent, and cultivated as a farm or garden or partly as a garden and partly as a farm; and an allotment garden being any allotment not exceeding forty poles in extent, which is wholly or mainly cultivated by the occupier for the production of vegetable or fruit crops for the consumption of himself or his family.

With regard to allotment gardens, a tenant is entitled to compensation for certain improvements when his landlord terminates the tenancy either (1) between April 6 and September 29, or (2) by three months' notice to quit, where the land is required for building and similar purposes, or for some public works purposes, or where the land is let by a local authority and they require it for their own use.

Compensation can be claimed from the landlord for any crops growing on the land in the ordinary course of cultivation upon it as an allotment garden and also for manure which has been applied to it. Against this, however, anything which is due to the landlord from the tenant for arrears of rent or for a breach of the tenancy agreement, and any damage the tenant may have done to his allotment, must be deducted from the amount of compensation the landlord would otherwise have to pay.

If, however, the landlord terminates the tenancy between September 29 and October 11, the tenant, although he cannot claim compensation, will be entitled to remove any crops growing on the land, provided he does so within twenty-one days after the end of his tenancy.

In the case of an allotment, the tenant can claim compensation from his landlord for crops, including fruit, growing on the land in the ordinary course of its cultivation, and also for labour expended upon and manure applied to the land. Secondly, he is entitled to compensation for fruit trees and bushes which he has himself provided and planted with the written consent of the landlord, and also for drains, outhouses, pigsties, fowl-houses and other structural alterations and improvements which he has made or erected, at his own cost, and with the consent of the landlord.

As in the case of allotment gardens, the landlord can set off against this anything which is due to him from the tenant in respect of the allotment, and so reduce the amount of compensation he will have to pay.

With regard to the removal of certain improvements by the tenant, Section 4 of the Allotments Act of 1922 provides that before the termination of the tenancy, the tenant of an allotment or allotment garden may remove any fruit trees or bushes which he has provided and planted and any erection, fencing or other improvement he has put up or made at his own expense; he must, however, make good any damage he does to the property in doing this.

The question of the right of a tenant who has paid compensation to an outgoing tenant yet remains to be dealt with, and the rule here is that where the tenant of an allotment has paid compensation to an outgoing tenant for any fruit trees or bushes or other improvements, he shall have the same rights as to compensation or removal as he would have had if the fruit trees or bushes had been provided and planted by him or the other improvements had been put up by him.

Lastly, if the landlord and tenant cannot come to an agreement as to what the amount of the compensation should be, it can be settled by a valuation by a valuer appointed by a County Court Judge. In most cases, no doubt, the parties will be able to come to terms, and should always try to do so, since the valuer's expenses will have to be paid between them, and even if the valuer awards a tenant a larger sum than his landlord was prepared to agree to, this may be reduced considerably after the valuer's expenses have been deducted. *H. Sharman.*

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* *Allendorff's Kulturpraxis der Kalt-und Warmhauspflanzen.* Fünfte Auflage, herausgegeben von. C. Bonstedt, Garteninspektor in Göttingen. Berlin, Verlagsbuchhandlung Paul Parey, Hedemannstr. 10/11. Price Rm. 19.00.

MESEMBRYANTHEMUM.

(*Continued from p.* 409.)

12.—GLOTTIPHYLLUM, HAW.

6. G. longipes, N. E. Br. (Fig. 195).—Growths decumbent or prostrate. Leaves 3-3½ inches long and 6–8 lines broad, flat on the face, rounded on the back at the lower part, becoming keeled and compressed at the apex which in the larger leaf of each pair is produced shortly beyond the flat face and in side view is obtusely rounded, and this leaf is incurved, while the other leaf of each pair is acute in side view and strongly recurved, smooth, green, shining, somewhat pellucid-dotted. Pedicel about 1¼ inch long and 2 lines thick, terete. Calyx 4-lobed; lobes broadly ovate, two of them keeled. Corolla, 2–2¼ inches in diameter; petals in two series, linear, obtusely pointed, entire, yellow. Stamens numerous, yellow. Stigmas 8, plumose, yellowish.

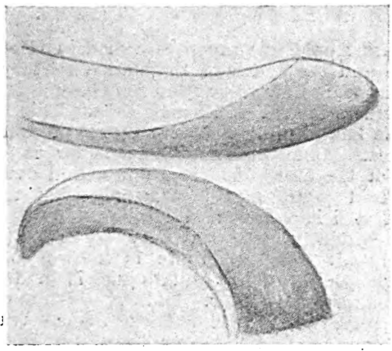

FIG. 195.—GLOTTIPHYLLUM LONGIPES.

Pair of leaves, adapted from Salm Dyck. Flowers pedicillate.

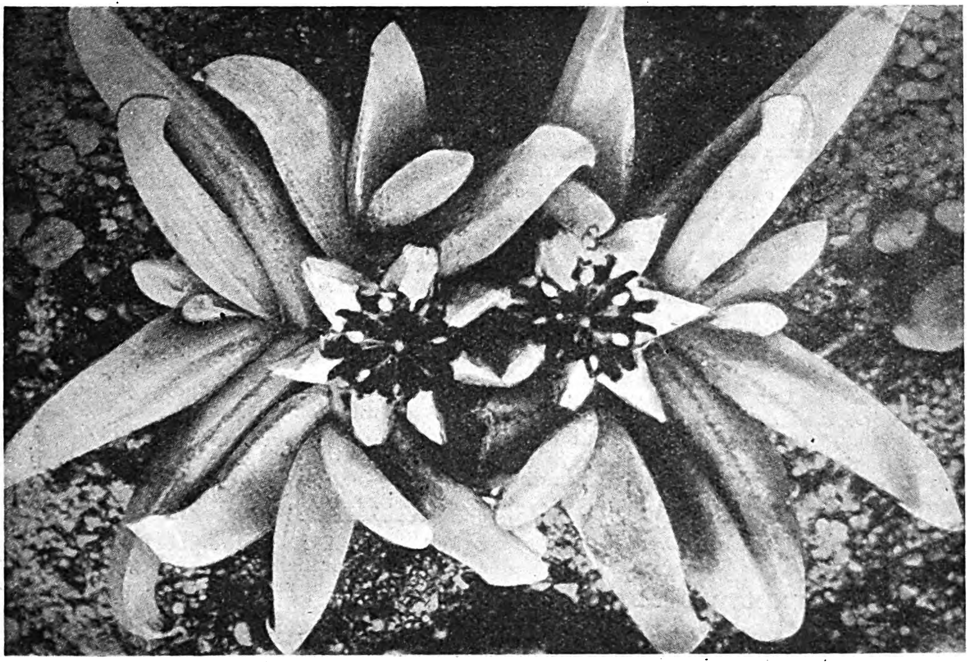

FIG. 197.—GLOTTIPHYLLUM MARLOTHII, SCHWANTES.

Mesembryanthemum cruciatum, Salm Dyck, *Mes.*, §7, f. 7 (not §8, f. 9), Berger, *Mes. und Port.* p. 237, f. 50, copied from Salm Dyck, not of Haworth.

South Africa: Locality and collector unknown, stated to have been raised at Schoenbrunn from South African seeds.

This species is unknown to me, and I have described it and illustrated the character of its leaves (Fig. 195) from Salm Dyck's figure and description above quoted, which, as I have explained under G. cruciatum, does not represent the true Mesembryanthemum cruciatum of Haworth.

7. G. Salmii, N. E. Br. in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9 (Fig. 196).—Leaves unequal, the pairs more or less crossing one another so as to point four ways, the outer spreading, 2½–3½ inches long, 6–8 lines broad and about 4 lines thick at the base, gradually tapering to an acute apex, but the larger leaf of a pair is often obtuse in side view and usually incurved, while the smaller leaf is acute and recurved, flat on the face, with a slight pustule at its base, obliquely convex on the back, the larger leaf of a pair where it is produced beyond the flat face being compressed and keeled at the apex; surface smooth, glabrous, very green, with a whitish basal mark, pellucid-dotted, firmly fleshy. Flowers sessile. Calyx compressed, 4-lobed; lobes broadly ovate, obtuse, apiculate, all with submembranous edges, two of them gibbous-keeled. Corolla 2¼ inches in diameter; petals in 1–2 series, cuneately linear, very obtuse and minutely denticulate at the apex, yellow. Stamens yellow. Stigmas 8, plumose yellowish.

Mesembryanthemum Salmii, Haw. *Suppl. Pl. Succ.*, p. 89 (1819) and *Rev. Pl. Succ.* p. 100; Link and Otto, *Ic. Pl. Select.*, p. 95, t. 44; Salm Dyck, *Mes.*, §7, f. 8; Berger, *Mes. und Port.*, p. 236.

South Africa: Locality and collector unknown, stated to have been raised from seed at Vienna in 1814.

Haworth (*Rev. Pl. Succ.*, p. 100) describes three forms of this plant, namely:—Var. decussatum, by which he means the typical G. Salmii, with leaves crossing one another more or less at right angles. Var. semicruciatum, Salm Dyck, *Obs. Bot.*, p. 12 (1820). "Leaves obliquely distichous, straight, not exactly decussate and more tongue-shaped." And var. angustifolium, "Leaves longer and narrower," M. Salmii var. elongatum, Salm Dyck, *Mes.* under §7, f. 8.

Salm Dyck sent young plants of the varieties semicruciatum and angustifolium (the latter as var. elongatum) to Kew in 1823, where drawings were made of them in that year. These drawings represent the leaves as straight and different in appearance from those represented in Salm Dyck's figure of M. Salmii, and the young leaves are very distinctly represented as being tipped with an apiculus, and I strongly suspect that these figures represent plants of G. praepingue. No mention is made of an apiculus in the descriptions nor any representation of it in the figure of M. Salmii, so that possibly the above mentioned varieties really belong to G. praepingue or to some closely allied species.

I have not seen a living plant of G. Salmii and have adapted Fig. 196 from the figure, quoted above. In the present state of our knowledge of these plants and in view of such proofs of variation in the leaves as I am giving evidence of under G. semicylindricum, G. fragrans and G. longum, may it not be possible that G. Salmii is only a form of G. praepingue? The difference between them is that in the figure and description of G. Salmii no indication is made of the awn-like apiculus present on most of the leaves of G. praepinque, and the presence of a whitish basal mark on the leaves of G. Salmii that is absent on those of G. praepingue. More native material is needed to solve this problem.

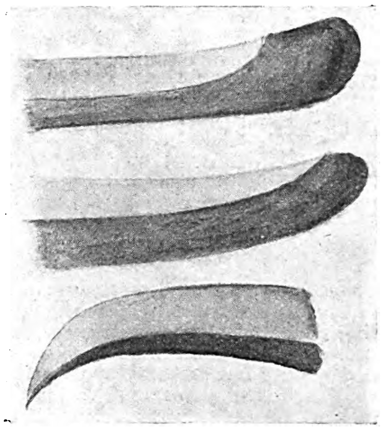

FIG. 196.—GLOTTIPHYLLUM SALMII.

Apical part of leaves, adapted from Salm-Dyck. Flowers sessile.

8. G. Marlothii, Schwantes in *Zeitschr. f. Sukkul.*, Vol. II, p. 242, with Fig. (1926), (Fig. 197).—Growths more or less prostrate with age. Leaves in two ranks, spreading, straight or recurving, with the tip of one leaf of each pair upcurved or hooked edgeways, 1¼–4 inches long and 8–10 lines broad at the middle, broader at the base, 4–5 lines thick, somewhat narrowing upwards to an obtuse or slightly hooked mucronate apex, flattish or faintly concave on the face, convex on the back and the larger leaf of each pair obliquely keeled at the apex, which is obtuse but often (or perhaps always) tipped with a small point or mucro at the end of the upper edge; surface smooth but under a strong lens seen to be covered with minute raised linear surface-cells transverse to the leaf, bright green, shining, pellucid-dotted and with a row of contiguous dark spots along each edge. Flowers sessile or subsessile, fragrant. Petals rather broad. Capsule stated to be 7-11-celled in the Latin description and 7-9-celled in the German, but as figured is 7-celled.

Uniondale Division: Karoo near Uniondale, Marloth 10991!

I do not possess this species, but Mr. E. Taylor, of Southborough, having obligingly lent me his plant of it for the purpose of this description, I find that it is not allied to G. grandiflorum and G. fragrans as Schwantes states, but belongs to the same group as G. praepingue. Mr. Schwantes (as Berger and others have done) seems to accept the names as given by Salm Dyck as being correct, and therefore constantly creates confusion, whereas one has only to look at such of his figures as I have indicated under G. semicylindricum and G. latum and its variety to see that what is evidently but one species has been given several different names. Salm Dyck's figures are excellent, but as I have repeatedly stated, are often untrustworthy as to names, and so long as writers upon this group of plants persist in accepting his names as correct without first investigating their authenticity, so long will confusion exist.

Fig. 197 is reproduced by permission of Dr. Vaupel from the figure in the *Zeitschrift f. Sukkulentenkunde*, by means of a photograph kindly sent to me by Mr. C. A. Maass. *N. E. Brown.*

(*To be continued.*)

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante pp. 131–137).

(*Concluded from p.* 411.)

WALES.

GLAMORGAN.—Owing to the late spring frosts most early Apples were a failure, but late-blooming kinds, such as Bramley's Seedling, carry fair crops. Pears and Plums that escaped the frosts carried fair crops. Peaches that were protected carried crops of good fruits. Gooseberries and Currants were quite good, and Raspberries benefited by the continuous rain. Strawberries suffered from the frosts and the crop was poor, with many deformed and useless fruits. Fruit trees are particularly healthy and free from blight and other pests. The soil is loam over limestone. *W. E. Wright, Tregarth Gardens, Creigiau, Near Cardiff.*

——The Apple crop generally in this district is very good. The best varieties with us are James Grieve, King of the Pippins, Cox's Orange Pippin, Lane's Prince Albert, and two or three others, which are carrying very heavy crops. Cherries, both Sweet and Morello, were very good. Bush fruits cropped abundantly, especially Gooseberries. I never saw fruit trees so free from blight. *C. T. Warrington, Penllergaer Gardens, Swansea.*

MONTGOMERYSHIRE.—The general outlook at flowering time was very promising for all kinds of outdoor fruits, but we have only a light crop of Pears. Apples had much better conditions this year, dry weather prevailing throughout the whole of the blossoming period, consequently we have an average crop. Plums were very lightly cropped, but we had an excellent yield of Gooseberries, Currants and Raspberries, while Strawberries were up to the average. Our soil is a clayey loam. Fruit trees are keeping much cleaner this season than usual. *Wm. Durrant, Brookland Hall Gardens, Welshpool.*

IRELAND, N.

MEATH.—The very wintry weather in May and June did much damage in some parts of this fruit district as we lack shelter around our orchards. Most growers have poor crops, and owing to low prices for fruits, many of them are giving up fruit-growing and are using the land for cattle grazing so as to save the expense of labour. Our soil is good, but labour is a difficult problem. *Michael McKeown, Julianstown, Drogheda.*

TYRONE.—The sharp frosts in late April spoiled the prospects of good crops of Pears, Plums and Cherries. Plums were a total failure, Cherries not much better and Pears about half a crop. Apples are fairly good, but the storms of wind and cold wet weather have been detrimental to the development of the fruits. Strawberries looked well but needed finer weather than they experienced. All fruits were later than usual. Our soil is a heavy clay. *Fred W. Walker, Sion House Gardens, Sion Mill.*

WESTMEATH.—Apples flowered well and set a fine crop of fruits, but cold, frosty winds in May caused a large amount of dropping and left a very light crop. Keswick Codling, Royal Jubilee and Bramley's Seedling are our best Apples. Plums gave much the best crop of tree fruits. Small fruits were very good, especially Raspberries. *Wm. Allan, Pakenham Hall Gardens, Castlepollard.*

IRELAND, N.E.

DOWN.—Although 8° of frost were registered on two consecutive nights, when the Apples were in full blossom, there are very good crops. None of the popular varieties have failed, and Bramley's Seedling is particularly fine. The dry condition of the soil and atmosphere no doubt saved a great many of the flowers. Plums and Pears were satisfactory crops. Excepting the sturdy variety Lloyd George, most Raspberries were affected by frost. Black Currants, too, resented the low temperature. Reversion in Black Currants is becoming a nuisance, and some varieties of Strawberries show deterioration and will have to be scrapped in favour of older and more vigorous sorts. *T. W. Bolas, Mount Stewart Gardens, Newtownards.*

IRELAND, S.

CORK.—Severe frosts at the end of April and in early May caused serious damage to fruit crop prospects. The harsh, dry winds and cold nights that occurred throughout May, and the early part of June retarded growth, consequently the season is later than usual. Heavy rains during the latter part of June, however, saved the crops of bush fruits, but not of Strawberries. Aphides and caterpillars have been scarce, particularly where the trees were sprayed with a tar-oil solution. Apple scab has not been so prevalent as in other seasons, but bullfinches have been more destructive than usual on Apples, Pears, and Plums. In spite of the indifferent season, both tree and bush fruits have yielded better crops than was expected. *J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.*

KILKENNY.—There was a good display of fruit blossoms but great injury was done by frosts. Apples, Pears and Plums have cropped irregularly. In one part of our gardens there are fairly heavy crops, and in other parts light ones. Bramley's Seedling Apples are a poor crop Victoria Plums were scarce, but most other fruits cropped fairly well. Slugs spoiled our Strawberries. There was a smaller aphis attack than usual, but mildew was bad on Gooseberries. *Henry Hall, Shankill Castle Gardens, Whitehall.*

——Apple trees flowered very well indeed, and were full of promise, but severe frosts at the end of April and early in May destroyed most of the blossom, with the result that crops were small. Other kinds of fruits which had set their crops earlier gave average yields of good quality. Plum trees sprayed with Carbokrimp have kept marvellously free from aphis attack this season. *T. E. Tomalin, Bessborough Gardens, Piltown.*

IRELAND, W.

GALWAY.—The fruit crops here are well above the average, with Apples and small fruits especially good. The weather was kind during the flowering periods and no frost was registered after the end of January. The soil is a medium loam overlying limestone; we face south and have a genial climate generally. *J. Chilcott, Lough Cutra Castle Gardens, Gort.*

CHANNEL ISLANDS.

GUERNSEY.—The prospects of a good fruit season were very high in the early spring, but, unfortunately, a long and very severe drought commenced just when the fruits were developing, consequently large quantities of fruits dropped. Stone fruits have suffered badly as a result of the continuous heavy winds experienced this season. *C. Smith and Son, Caledonia Nursery.*

——For some years past, Apricots, Plums and Peaches have practically given no crop, probably because our mild winters allow the trees no winter rest; the flowers come quite a month too soon and the pollen does not ripen. The trees flower quite well enough but, in spite of netting, the fruits do not set. The soil is variable, from almost pure sand, through silt, then gravel—but the writer does not believe the soil has changed much, if at all, during the last fifty years, for when he was young he used to gather large quantities of Plums, Peaches and Cherries, but in those years colder winters were generally experienced, which caused the trees to rest and flower much later. *W. Mauger and Sons, Brookdale Nurseries.*

FRUIT REGISTER.

APPLE GOLDEN PIPPIN.

THIS Apple was much esteemed in Herefordshire and the south of England a century ago, but appears now to be somewhat scarce because it cankers in cold and heavy soils. This pretty Apple has a number (over twenty) of confusing names. Some pomologists consider it to be one of the finest dessert Apples, and over one hundred years ago it was regarded as the most delicious-flavoured Apple in cultivation, so evidently the variety was thought highly of. Golden Pippin is known to have a high specific gravity and its juice is in demand for making a fine cider. Old writers state that it was raised at Parham Park, near Arundel, Sussex. The fruits are small, roundish, inclining to oblong, regularly and handsomely shaped; the skin is rich yellow, assuming a deep golden tinge when perfectly ripe, and the whole surface is strewn with russety dots. Eye, small and open; stalk, rather long, inserted in a deep cavity; flesh, yellow, firm, crisp, very juicy and sugary, with a brisk, vinous flavour.

Golden Pippin and King of the Pippins are often gathered in the same basket for market purposes and cider making. Few trees of this pretty Apple are found in a young state, therefore its existence will evidently be short. I believe that if it were worked on the Paradise stock we should rejuvenate a very useful late Apple, as the fruits keep well until April.

APPLE ENGLISH CODLIN.

THIS very old and interesting Apple may still be found growing in out-of-the-way cottage gardens. A few years ago, I was passing through the village of Hoar Witby, near Hereford, and saw a number of trees of this old Codlin, grown from slips or cuttings. The trees were small but heavily laden with fruits of a useful size. The fruits are above medium size, conical, and irregular in outline, pale yellow with a faint blush on the side exposed to the sun; stalk, short and stout and deeply inserted. The flesh is white, tender and agreeably acid in flavour.

Some years ago, I came upon some old buckets slit up on one side and embracing some branches of this Codlin, and was informed these old buckets were going to be filled with soil to enable the branch to root and make a tree. I saw this method of propagation adopted also at Swanwick, in Hampshire, on the branches of a pet Blenheim Pippin tree; if the endeavour had been successful quite a large fruiting tree would have resulted.

APPLE CORNISH GILLIFLOWER.

THE Weeping Willow Apple fruits best on the tips of the branches, therefore great care must be used when pruning this excellent dessert variety. Cornish Gilliflower was brought to notice by Sir Christopher Hawkins, who sent it to London to be shown at the Horticultural Society's meeting in 1813. It was discovered growing in a cottager's garden, near Truro, Cornwall. As it became distributed the name of July-flower was given it, this being a corruption of the more correct name of Gilliflower, which is derived from the French *Girofle*. The fruit is of medium size; eye closed; stalk long; colour dull green on the shaded side, and sprinkled with russet on the side next the sun; flesh firm, rich and of good flavour, heavily and strongly Clove-perfumed. This Apple is in season from January to April and does exceptionally well when grown as a half-standard. *Pomona.*

VEGETABLE GARDEN.

GROUND WORK.

The time of year has arrived when the business of digging and trenching the vegetable quarters should be pushed forward with all possible dispatch, and if a major portion of the work can be finished before the New Year, so much the better. Where labour and time permit, it is advisable to trench or double-dig as large an area as possible. The difficulty of obtaining adequate supplies of good manure is becoming increasingly great, therefore one has to fall back more than ever on garden refuse, which, however good it is, is not so good as manure. Those who have heavy land to deal with, and where it can be trenched, may always work plenty of leaves, spent crops of all kinds, road scrapings, etc., into the bottom trench and thus greatly help to lighten the subsoil. The modest amount of farmyard or stable manure obtainable should be used nearer the surface.

Soils which lie wet, or are very tenacious, will benefit greatly from good dressings of ground lime and wood-ash, and a liberal quantity of both may be spread on the surface so that the winter rains and snows may wash it well in. Such dressings assist in securing a fine tilth when the ground is forked over again in the spring.

All the land dealt with should have the surface left as rough as possible; the surface of heavy soils should be ridged up for the winter. Some soils are particularly difficult to break down in the spring, even after they have been allowed to remain rough on the surface all the winter. These should have a liberal dressing of road sand or half-decayed leaves.

Ground that has carried crops of Celery and Leeks will, after these crops have been cleared, only require a good forking over to make them level, as it is almost always in good condition and ideal for a crop of Potatos, Peas, or such roots as Carrots, Beet or Parsnips.

Land intended for Cauliflowers, Broccoli, Cabbages, Brussels Sprouts and other members of the Brassica family, should be trenched or double-dug, and the heaviest soil should be selected. If it is well-worked it will always produce finer produce than light soils, and the crops will withstand drought much better. The lighter soils should be reserved for Potatos and root crops, Lettuces, and Spinach.

For Celery and Leeks a piece of ground that has carried crops of Carrots and Beet will be suitable, as the surface is usually fairly firm and level, and the trenches may be taken out neatly. This work should, however, be deferred until the spring or, at least, until after other ground work is finished. If the work is carried out early the sides of the trenches are liable to fall in owing to the action of the weather. and they not only present an untidy appearance, but much of the work has to be done over again.

All spent crops should be wheeled to one large heap and dressed with lime. Asparagus foliage, Pea haulm and prunings from fruit and other trees should all be burnt and the ash used for mixing with heavy soils. All old potting soil should be carefully saved and kept dry during the winter, as this forms valuable material, when sifted, for filling in the holes made for producing extra good roots of Carrots, Parsnips or Beet. In some gardens where the soil is of an unkind nature the use of this material is absolutely necessary for the production of clean shapely roots.

After the tops have been cut down, the beds of Asparagus should be cleared of weeds and top-dressed with well-decayed manure, which in turn should be covered with two or three inches of soil taken from the alleys.

Weeds have been more than usually troublesome this season, and where they still persist they should be dug in as deeply as possible. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Damage to Foliage of Fruit Trees.—Three days after the terrific gale which passed over the British Isles on October 28, I noticed that the foliage of all our fruit trees began to change colour. In one week it had turned from very green to brown and could not have looked worse had it been scorched by a painter's blow-lamp. I have never experienced anything so drastic before. The wind was not cold, as the temperature did not fall below 50°. What factor was present to cause such havoc? Such early loss of foliage will, I fear, have a detrimental effect on the buds. Forest trees shared the same fate but, naturally, their foliage was more advanced than that of fruit trees. It would be of great interest to learn the experiences of others, especially in gardens situated more inland than ours. *J. Kneller, Penrhyn Castle Gardens, Bangor, North Wales.*

Damp in Violet Frames.—During the dull months of winter, great care is necessary with Violets growing in un-heated frames, especially double varieties. A very good method I have found to absorb superfluous moisture is to smash up some dry coke, pass it through a sieve with a half-inch mesh, and spread a thin layer between the plants. Not only does this check the effects of damp, but it keeps slugs from eating the flower buds. *F. W. D.*

Lavendula Stoechas.—In *The Gardeners' Chronicle* of October 22, "R. F." at Wisley, asks for comments from those who are growing Lavendula Stoechas. We brought back a few plants from the south of France in the spring of 1920, and since then have never been without it. In our small "maquis" among Cistus, tall Heaths, Myrtles, etc., it grows fully three feet high; in more exposed places about two feet, and in both flowers well, and is always attractive. Old, weedy plants sometimes get damaged in the winter, but more from wind than frost, I believe, as seedlings spring up profusely. *A. D., Tulgey Wood, Dorset.*

Helenium Wyndley.—The answer to your correspondent, S. Arnott (p. 365), regarding the above, is to be found in the fact that it was raised by Messrs. Thos. B. Grove and Son in their nurseries at Wyndley, Sutton Coldfield. The letter "H" appearing on the label when purchased would simply apply to the species. *J. Smith.*

——I think I can help Mr. S. Arnott, regarding his query (page 365) as to the origin of Helenium Wyndley. In 1920, I obtained from Messrs. Thomas B. Grove and Sons, Wyndley Nurseries, Sutton Coldfield, a new Helenium raised by them and named Wyndley Hybrid. This is of precisely the same type as described by Mr. Arnott, but the colour is coppery-bronze, heavily veined on a yellow ground. It is one of the very best herbaceous plants in my collection. I think there can be no doubt that Mr. Arnott's "Wyndley" originated with Messrs. Grove, who incidently, also sent me that really fine orange Geum raised by them, and called Orangeman. *Alan Gibbs, Tanglewood, Lisbane, Glamorgan.*

Gale Damage at The Node Gardens.—The recent gale did tremendous damage at The Node Gardens, the residence of Mrs. Carl Holmes, on October 28 and 29. A large pergola, forty-two yards long, well-furnished with creepers of various descriptions, was levelled from end to end; the gale was of terrific force, as the stone columns, fifteen inches in diameter and twenty-six in number, were all laid low, and in some instances the foundations of the columns were torn from their bedding. This disaster appears to be a blessing in disguise as it has opened up the view of the mansion to much better advantage, giving it a much more imposing appearance from various aspects. I regret no photograph was taken while the pergola was laying on the ground. No damage was done to trees or shrubs. *W. J. Penton, The Node Gardens, Welwyn, Hertfordshire.*

Hypericum patulum Forrestii.—May I be permitted to correct the printer's error in your issue of November 12, page 385, where the habitat of Hypericum patulum var. Forrestii is given as Hunnan. This variety is, I believe, confined to the Lichiang Range, Yunnan. We may frequently expect reasonable hardiness in plants introduced from this mountainous province, whereas Hunnan is at a lower elevation (generally speaking), and farther inland, with a hotter and moister climate, even though it is geographically farther north. I may also qualify my statement regarding the reduction in length of all branches with the remark that the pruning might, with advantage, be carried a step further—the whole plant being cut down to within four to six inches of the ground, thus causing it to produce fewer and stronger growths. I mention this because several growers have recently expressed disappointment with the plant when grown in sandy soil, the growth made being described as thin and bushy. In such cases herbaceous treatment may solve the problem. *L. B. C.*

Schizostylis coccinea.—Hitherto I have grown this plant in calcareous loam, in the open garden, in as dry a situation as these gardens permit, but owing to our close proximity to the river Test, and the low level of the land, the site is unavoidably damp. I have been disappointed with the results. Doubtless in many gardens where it is grown in the open near to dark-leaved evergreens, it has given an attractive display of flowers during this remarkable autumn. A few seasons ago, the effects of early frosts induced me to resort to pot culture. A portion of the stock is potted in well-drained, eight-inch pots, using loam, a moderate admixture of sand, small potsherds, charcoal, and a little bone-meal; the pots are placed on a coal-ash bottom in the open, and the plants are placed in a cool house when the spikes show colour. I divide and repot those that have remained in their pots two seasons, but those that are potted early in the spring are top-dressed with fresh soil. Being quite hardy the plants are stood outside after being gradually inured to the prevailing weather. The results achieved prove satisfactory, for even with scant attention they certainly surpass those in the open. *Frederick Gooch.*

A Late-flowering Scarlet Catch-fly.—A rather remarkable plant is now (November 17) flowering in the open border in my garden, namely, Silene regia. Seeds were kindly given to me by Captain Gresham, who obtained them from the Missouri Botanic Garden. These were sown last autumn in a cold house and several seedlings appeared in the spring. They were planted out in a somewhat damp border of rich loam and soon made rather gawky plants with very much the appearance of our common Campion. There were no signs of buds until well into October, when they appeared in the leaf axils and at the ends of shoots which by this time were about two-and-a-half feet in length. Now the buds have expanded into vivid scarlet flowers, the petals being narrow and about half-an-inch long. The calyx is slightly larger than the petals, pale green and densely glandular. The opposite leaves and the stem are also covered with slightly viscid glands, but emit no scent that I can detect. The scarlet petals are of the same curious, scintillating quality that one finds in the flowers of Nerines. As the petals are narrow the flower just misses being a first-rate addition to the garden, but it seems quite possible that forms with broader petals may yet appear. My plants happen to be growing near Lobelia fulgens var. Huntsman, and the colour of the flowers is almost identical. How far Silene regia is going to prove hardy (if indeed it is a true perennial) I dare not yet say, but its late-flowering season makes it a desirable acquisition for gardens situated in mild districts. *N. G. Hadden, West Porlock, Somerset.*

SOCIETIES.

BIRMINGHAM CHRYSANTHEMUM.

November 15, 16 and 17.—This Society's annual show, held in Bingley Hall, Birmingham, on the above dates, was a pronounced success. It was larger than the one held a year ago, and the quality of the exhibits generally was considered satisfactory. Single-flowered Chrysanthemums were shown in great numbers, and also large Japanese blooms. There were six entries in the class for thirty-six Japanese blooms, but Chrysanthemums exhibited on boards seem to find little favour at Birmingham, as only two exhibits were forthcoming. Of miscellaneous plants, Begonia Gloire de Lorraine was shown extensively and in excellent condition, while Cyclamens, too, were good, but Primulas and Pears were poorly represented. Table decorations were greatly admired, and vegetables were particularly well and extensively shown. The weather during the whole of the show was very mild, and the attendance satisfactory.

Groups.

In the class for a group of Chrysanthemums arranged as grown, with Ferns and foliage plants, on a ground space of fifteen feet by six feet, there were two entries against three last year. The first prize of £12 was again won by Viscount Cobham, Hagley Hall, Stourbridge (gr. Mr. J. H. Roberts), whose artistically arranged group included Japanese, Incurved, Decorative and Single-flowered varieties. About two dozen dwarf plants of Mrs. Algernon Davis were a great feature, being arranged along the front part of the group. They carried large, beautifully clean, silvery-pink flowers, indicative of a purer atmosphere than that of the Birmingham district. The variety Mrs. R. C. Pulling, of rich pure yellow colour, was also very good. Decorative and Single-flowered varieties were freely introduced, and the group was edged with Blanche Poitevine, a foot in height, carrying large numbers of pure snow-white flowers. The second prize went to George Jackson, Esq., J.P., Berrow Court, Edgbaston (gr. Mr. E. A. Edney), whose handsome group consisted almost entirely of large Japanese blooms, rather stiffly arranged. The plants, however, exhibited good culture, but the group was not representative of the various sections into which the Chrysanthemum is divided. Two varieties of outstanding merit were Mrs. Geo. Monro and Majestic.

Specimen Plants.

Colonel A. J. Parkes, Edgbaston (gr. Mr. L. T. Hochkins), was the only entrant in each of three classes for (1) six Decorative Japanese Chrysanthemums (Singles excluded); (2) Single-flowered varieties, disbudded, and (3) three Decorative varieties, disbudding allowed. Colonel Parkes well deserved each of the first awards, as each specimen—upwards of five feet in height—was well covered with flowers, especially the varieties Katrina, Black Hawk, Market Red, Sweet Auburn, Florrie King, Romance and H. W. Thorpe.

Cut Blooms.

In the class for a collection of Single-flowered Chrysanthemums, on a table space of ten feet, by five feet, Mr. H. Woolman, Shirley, Birmingham, gained first prize with magnificent flowers of Mona (white), Bob Greenfield (purple), Mrs. Harry Woolman (orange-yellow), Mrs. W. J. Godfrey, Catriona, Alert, Mrs. H. Robertson, Sandown Radiance, Devonshire Cream and Stewart Smith. The second prize went to Mrs. Guthrie, Northampton (gr. Mr. P. Burr), whose bunch of Susan was of outstanding merit.

There were half-a-dozen first-rate entries in the principal cut bloom class for thirty-six Japanese blooms, in not fewer than eighteen varieties, and not more than three blooms of any one variety. Each bloom was shown in a separate vase and each exhibit was arranged on a table of twelve feet by four feet, with a board eight inches high running down the centre; cut foliage was admissible for effect. The first prize of £15, which carried with it a Silver Shield, to be held for one year, was won by The Dowager Lady Annaly, Holdenby House, Northampton (gr. Mr. D. Cameron), who had large, heavy blooms of Queen Mary, Mrs. B. Carpenter, Yellow Majestic, Red Majestic (premier bloom in the show), Autumn Tints, Mrs. G. Monro, Princess Mary, Shirley Autocrat, Julia, General Petain, Victory and Mrs. A. Davis. Last year's winner, Colonel Gretton, M.P., Melton Mowbray (gr. Mr. A. Graham), was a very close second; his best flowers were William Turner, Majestic, Shirley Golden, Mrs. G. Monro, Red Majestic, Julia, Cissie Brunton, Mrs. B. Carpenter and Mrs. A. Davis; third, Mr. H. H. Tomlinson, Derby, whose flowers of Dawn of Day, Mrs. A. Brown, Gilbert Drabble, Princess Mary and Cissie Brunton were commendable.

In a class for nine vases of Japanese Chrysanthemums in three varieties there were four entries, the Dowager Lady Annaly's excellent exhibit being placed first. The flowers of Majestic, Red Majestic and Julia were extraordinarily large, of good depth and intense colour. Colonel Gretton, M.P., was again the runner-up with very good specimens of Princess Mary, Majestic and Mrs. B. Carpenter; third, Mrs. Wakeman Newport, Bewdley (gr. Mr. W. Pummell). The next class was for twelve vases of Japanese Chrysanthemums in not fewer than nine varieties, arranged on a table six feet by three feet. There were five entries, and the first prize was gained by Mrs. Guthrie with a beautiful set of large, well-developed blooms, arranged over a ground-work of Asparagus and Berberis Aquifolium. A few of the best varieties in this notable lot were Shirley Golden, Mrs. B. Carpenter, Julia, Princess Mary and Mrs. Geo. Monro; second, G. L. Waller, Esq., Finstall Park, Bromsgrove (gr. Mr. E. Avery), who had good specimens of Queen Mary, William Turner, Louisa Pockett and Mrs. R. C. Pulling; third, Colonel Gretton, M.P. Colonel Gretton M.P., also exhibited the winning three vases of a pink-coloured Japanese Chrysanthemum, showing Mrs. B. Carpenter; second, Mr. S. G. Jenkins, Berkswell, with Mrs. Algernon Davis; third, Lady Annaly, with General Petain. The leading three vases of a crimson Japanese variety came from the last-named exhibitor, who had intensely-coloured specimens of Mrs. George Monro; second, George Jackson, Esq., J.P. (gr. Mr. E. A. Edney), who also showed Mrs. George Monro. Lady Annaly excelled in the class for three vases of a white Japanese variety with large, substantial blooms of Queen Mary; Mr. A. Fletcher, Kidderminster, was second, with Cissie Brunton, and G. L. Waller, Esq., third, with Louise Pockett. The best of seven entries in a class for three vases of a yellow Japanese variety also came from Lady Annaly, who showed uncommonly good flowers of Yellow Majestic; second, Mr. S. G. Jenkins, with Mrs. R. C. Pulling; third, Colonel Gretton, with Yellow Majestic. Lady Annaly was also to the fore in the class for three vases of any Japanese variety other than those mentioned above.

The class for six varieties of Single Chrysanthemums, six blooms of each variety, was well filled, there being seven entries. Premier honours went to Mrs. Guthrie, who showed beautiful flowers of Robert Collins, Molly Godfrey, Reginald Godfrey, Edith Dymond, Mrs. J. Palmer and Susan; second, Mr. H. Woolman, whose Dorothy Capp, Mrs. R. Harris and Mrs. W. J. Godfrey were well-shown; third, Colonel Gretton. The winning exhibit of six varieties of Decorative Chrysanthemums came from Mr. H. Woolman, who had exquisite flowers of Romance, White Lady, Pink Thorpe, and Somerset; second, Colonel Gretton, who showed Sunburst, Felix and Gloriosa exceedingly well; third, Mr. E. J. Keeling, Small Heath, Birmingham. Of the eight exhibits of nine blooms of a Single-flowered Chrysanthemum arranged for effect, the best was shown by Mrs. Guthrie; second, Colonel Gretton; third, Lady Annaly.

Local Classes (Open).

Some remarkably fine blooms were exhibited in the classes reserved for local growers. The most successful exhibitor was Miss Harrold, who was awarded five first prizes. The first prize in the class for twelve Japanese varieties, three blooms in a vase, was won by Mr. G. Moorman, Bournbrook, with Queen Mary, Princess Mary, Julia, Mrs. R. C. Pulling and William Rigby; second, Messrs. J. and W. E. Green, Cradley, with large, heavy specimens of A. J. Norris, John H. Starr and Mrs. Gilbert Drabble; third, Miss Harrold (gr. Mr. A. Jones). The best pair of vases of Japanese-Chrysanthemums in two varieties, three blooms of each, came from Mr. Thomas Blower, Perry Barr, who showed handsome specimens of Shirley Golden and William Turner; second, H. F. Keep, Esq., Edgbaston (gr. Mr. T. W. Davis); third, Mr. G. Moorman. In the class for four vases of Incurved blooms (Japanese-Incurved excluded) in four varieties, three flowers in each vase, Miss Harrold took the lead with charming flowers of Clara Wells, Romance, Miss Thelma Hartman and Frank Fustain; second, H. F. Keep, Esq. Miss Harrold was again the prize-winner in the class for two vases of Incurved Chrysanthemums (Japanese-Incurved excluded) in two varieties, three blooms in a vase, with refined flowers of Clara Wells and Miss Thelma Hartman; second, H. F. Keep, Esq. Miss Harrold was also placed first in the class for twelve varieties of Japanese Chrysanthemums, three blooms in a vase, open only to growers residing within five miles of Birmingham. She exhibited fresh blooms of Mrs. W. Holden, Frank A. Edwards, Queen Mary, Majestic and Mr. F. Slack. H. F. Keep, Esq., and Councillor F. W. Daniels were placed second and third, respectively.

The winning exhibit in the class for two vases of Japanese Chrysanthemums, three blooms of each variety in a vase, with the same conditions as in the last-named class, was shown by Mr. Thomas Blower; second, H. F. Keep, Esq.; third, J. A. Rymer, Esq., Hockley. The class for three varieties of Single Chrysanthemums, disbudded, made a good show, Mr. S. G. Jenkins, Berkswell, being first, with extra large flowers of Mrs. Harry Woolman, Catriona and Susan; second, Mr. E. J. Keeling; third, Miss Harrold. Mr. E. J. Keeling was the only exhibitor in the class for three varieties of disbudded Decorative Chrysanthemums, and he was awarded the first prize for splendid specimens of Blanche de Poitou, Atalanta and In Memoriam. Mr. S. G. Jenkins won the first prize for six vases of Single Chrysanthemums, disbudded to one bloom on a stem. He had excellent flowers of Edith Dymond, Molly Godfrey and Mrs. W. E. Cattow; second, Mr. E. J. Keeling.

The following seven classes were provided for amateurs who do not employ a professional gardener regularly. Mr. F. W. Hickton, Belbroughton, had the best Anemone-flowered varieties, and Mr. H. H. Tomlinson, Derby, beat seven contestants in the class for two vases of Japanese varieties, three blooms of each. Mr. W. Dethridge, Black Heath, gained leading honours in the single vase class for Decorative Chrysanthemums, and Mr. J. S. Pearson, Erdington, was first in the class for three Japanese varieties. Mr. E. J. Keeling won first prizes for one vase each of (1) a Single white Chrysanthemum; (2) a Single yellow Chrysanthemum, and (3) a vase of any variety arranged for effect.

Table Decorations.

The table decoration classes are always a feature at Birmingham. In the first of the two classes flowers were restricted to Chrysanthemums. The first prize was won by Sir George H. Kenrick, Edgbaston (gr. Mr. J. V. Macdonald), who had yellow and reddish-bronze Single varieties lightly arranged in silvered stands; a pretty effect was produced by the introduction of long sprays of Ceropegia. Mr. E. J. Keeling and Mrs. Yates, Warwick, were equal second. The first-named exhibitor used a pinkish Anemone variety and well-coloured sprays of Selaginella, while Mrs. Yates' table was decorated with a Single bronze variety and beautifully coloured foliage of Ampelopsis Veitchii. There were twelve entries in this class.

In the next class, flowers other than Chrysanthemums were allowed, and all had to be shown in vases and/or bowls, or both. Mrs. Yates was first with a large, flat, central bowl of charmingly-arranged buds of Rose Madame Butterfly, intensely-coloured Ampelopsis Veitchii and Selaginella foliage were employed with good effect; second, Sir George H. Kenrick, who employed Orchids and Single-flowered Chrysanthemums; third, Mrs. E. Reynolds, Garningale, with red Carnations.

Special Prizes.

Special prizes for Chrysanthemums were offered to allotment holders, members of allotment associations, per Mr. J. A. Duller, as follow:—For one vase of Japanese Chrysanthemums, in not fewer than three varieties, Mr. H. H. Tomlinson, Derby, was first with very creditable blooms; second, Mr. R. J. Edwards. The last-named exhibitor won first prize in the class for six blooms of a Decorative variety, and in another for a vase of a disbudded Single-flowered variety.

Mr. H. Woolman offered prizes to amateurs (gentlemen's gardeners excluded) in the three following classes: — For nine Japanese blooms, in three vases: First, Mr. S. G. Jenkins, with beautifully fresh, good-sized flowers of Majestic, Queen Mary, R. C. Pulling and Mrs. B. Carpenter; second, Mr. W. T. Hudson, Selly Oak; third, Mr. R. J. Edwards. Mr. H. H. Tomlinson was first for six Japanese varieties on boards, with big, heavy flowers; second, Mr. R. J. Edwards; and in the class for twelve Japanese blooms in four varieties, shown in vases, open to gentlemen's gardeners, Mr. D. Cameron gained the premier award with excellent examples of Majestic, Yellow Majestic, Red Majestic and Mrs. George Monro; second, Mr. E. Avery; third, Mr. W. Pummell.

Miscellaneous Plants.

In the class for twelve plants of Begonia Gloire de Lorraine there were six entries, which made quite a show in themselves. Colonel A. J. Parkes was first, with very large, pyramidal, profusely-flowered specimens; second, the Earl of Plymouth, Hewell Grange, Redditch (gr. Mr. F. Molyneux); third, Edward Ansell, Esq., Sutton Coldfield (gr. Mr. A. Jeffs). The same three exhibitors were placed in the order named in a similar but smaller class for six plants of Begonia Gloire de Lorraine. The class for twelve Cyclamens attracted six contestants. The Earl of Plymouth gained the first prize, and his plants had beautifully marbled foliage and good-sized, strong-stemmed flowers; second, G. L. Waller, Esq.; third, Viscount Cobham. In the class for six Cyclamens, G. L. Waller, Esq., beat the Earl of Plymouth, who was closely followed by Miss Harrold. George Jackson, Esq., J.P., won first prizes for (1) six Palms, and (2) one Tree Fern; and Mr. T. Andrews, Lichfield, was placed first for (1) three Palms, and (2) one Palm. The best of three exhibits of six Primula sinensis came from G. L. Waller, Esq., but they were very poor compared with the magnificent Primulas for which Birmingham was noted a quarter-of-a-century ago. The class for six Primula obconica made a much better show. G. L. Waller, Esq., secured first prize; second, Colonel A. J. Parkes; third, the Rt. Hon. Neville Chamberlain, M.P., Edgbaston (gr. Mr. P. G. Catt). The first prize for six plants suitable for table decoration was won by Sir George H. Kenrick; second, Lady Annaly.

Fruit.

The winning collection of British-grown fruit, occupying a table space of fourteen feet by four feet, came from the Studley Horticultural College, Warwickshire, and included handsome Alicante, Gros Maroc, Lady Downes and Canon Hall Muscat Grapes; Apples and Pears in great variety, together with Plums and other fruits; second, Mr. Charles Gregory, Chilwell, whose display consisted of Apples and Grapes; third, Mr. A. Fletcher, Kidderminster.

Mr. C. W. Powell, Wareham, Hereford, won six first prizes in the classes for single dishes of Apples, viz., Allington Pippin (beautifully coloured), Gascoyne's Scarlet (very big), Hambling's Seedling, James Grieve (richly coloured); King of the Pippins, Lane's Prince Albert; and second prize for Annie Elizabeth, Newton Wonder and The Queen. Mr. H. Wallhead, Leamington, excelled in the classes for Bismarck and Bramley's Seedling. Mr. H. Cartwright, Kidderminster, had the best examples of Annie Elizabeth and Newton Wonder. The Forest and Orchard Company, Falfield, took the first prizes for Blenheim Pippin and Charles Ross, while Mr. C. Gregory showed the winning dish of Cox's Orange Pippin, which was very fine. Studley College had the best dishes of Cox's Pomona and Peasgood's Nonesuch, and Mr. H. G. Bois, Alcester, was first for the Rev. W. Wilks and The Queen. The best dish of Lord Derby was sent by Mr. G. M. Morden, Tamworth, and Mr. W. P. Orrill excelled in the class for Warner's King.

Mr. C. W. Powell and The Forest and Orchard Company were placed first and second respectively in the class for three dishes of culinary Apples, and gained awards in the same order in another class for three dishes of dessert Apples.

Competition in the classes for single dishes of Pears was disappointing. The Studley College took first prize for Beurré Diel and Doyenné du Comice, while Mrs. Guthrie had the best dish of Pitmaston Duchess. The Forest and Orchard Company sent the winning dish of any other variety not mentioned in the schedule. The variety exhibited was Doyenné Georges Boucher.

The best three bunches of black Grapes came from the Studley College, who showed nice, even-sized examples of Alicante; second, Lady Annaly, also with Alicante; third, the Earl of Lichfield, Stafford (gr. Mr. G. Smith). The last-named exhibitor led in the class for three bunches of white Muscat Grapes. F. Scarf, Esq., Edgbaston (gr. Mr. C. Grigsby), scored in the local class for black Grapes with Alicante, and Mr. S. G. Fathers and Mr. C. G. Compton were placed first and second respectively in classes for culinary and dessert Apples.

Vegetables.

Competition in the class for six varieties of Potatos brought nine excellent entries. Mrs. Guthrie was placed first, with beautifully clean, even tubers of Arran Comrade, King Edward, Witch Hill, Chieftain, Catriona and Red King; second, Mr. A. H. Hickman, Cookley, Kidderminster; third, Major Harcourt Webb, Bewdley (gr. Mr. W. Gaiger). The last-named exhibitor excelled in the classes for single dishes of Carrots, Onions, Long Beet and Parsnips. Mr. S. G. Fathers took the lead with round Beet and yellow Shallots, while Mr. W. Maycock, King's Heath, had the best Celery and red Shallots. Mr. Henry Masters showed the winning exhibits of Savoys and Brussels Sprouts, and Mr. E. J. Keeling was first for green Cabbages and Red Cabbages. Mr. A. H. Hickman sent the best Cauliflowers, and Mrs. P. Adams, Kidderminster, excelled with Leeks.

Special Prizes for Vegetables.

Prizes were offered, per Mr. J. A. Duller, for a collection of six kinds of vegetables. The ten entries in this class included some wonderfully fine exhibits. Mr. W. P. Orrill, Hinckley, who gained the leading honour, had Celery, Cauliflowers, Leeks, Onions, Potatos, and Carrots, all nicely displayed; second, Mr. A. Haynes, Hartlebury; third, Mr. W. E. Whitcombe.

The best exhibit of four varieties of Potatos was contributed by Mr. A. Haynes; second, Mr. S. G. Fathers; third, Mr. W. Keeley, Nuneaton.

A great many prizes were offered through the same donor for single dishes of vegetables which were duplicates of the above single dish classes, and the prizes were divided very largely between the same set of exhibitors.

Messrs. Sutton and Sons offered prizes for nine kinds of vegetables. Mr. A. H. Hickman was awarded the first prize with splendid Celery, Leeks, Onions, Carrots, Beet, Tomatos, Potatos, Brussels Sprouts and Cauliflowers; second, Mrs. P. A. Adams.

Messrs. Webb and Sons' prizes were for six kinds of vegetables, and Mr. A. H. Hickman again took the lead and Mrs. P. Adams was placed second.

Messrs. Dickson and Robinson's prizes were offered for nine bulbs of Premier Onions, and were won by Mr. William Robinson, Garstang, Mr. E. J. Keeling and Mr. W. Maycock, respectively.

Messrs. Clibran's prizes for eight kinds of vegetables went to Mr. S. G. Fathers, and Mr. A. Fletcher, Kidderminster.

Honorary Exhibits.

Large Gold Medals were awarded to Messrs. Waterer, Sons and Crisp, for hardy shrubs; Messrs. Bakers', for floral designs; Mr. John Cook, for Potatos; Messrs. Gunn and Sons, for hardy shrubs and cut Roses; King's Acre Nurseries, for fruit; Mr. H. Woolman, for Chrysanthemums; King's Acre Nurseries, for Chrysanthemums; and Messrs. Hewitt and Co., for hardy shrubs.

Small Gold Medals were awarded to Messrs. Clement Dolly and Co., for flowers and vegetables; Messrs. Bakers', for hardy shrubs; Forest and Orchard Company, for shrubs; Messrs. W. Hopwood and Sons, for fruit; Messrs. Hewitt and Co., for floral designs; Mr. R. Scott, for hardy shrubs; and Messrs. J. and W. E. Green, for Chrysanthemums.

Silver-gilt Medals were awarded to Mr. H. N. Ellison, for fruit and flowers; Forest and Orchard Company, for fruit; Messrs. J. P. Harvey and Co., for fruit and vegetables; Messrs. Kent and Brydon, for fruit and flowers; and Messrs. P. and J. Smith, for a rock and water garden.

Silver Medals were awarded to Mr. H. Masters for vegetables; Miss H. H. Thompson, for Cacti; and Mr. F. Rich, for flowering plants.

A Bronze Medal was awarded to Messrs. Reamsbottom and Co., for Anemones.

KINGSTON, SURBITON AND DISTRICT CHRYSANTHEMUM.

The twentieth exhibition of this Society was held in the Surbiton Assembly Rooms, on the 9th inst., and proved a great success. The number of exhibits almost doubled those of last year, many new exhibitors having come forward; the quality of the blooms was remarkably good. The tradesmen's Challenge Cup for eighteen Japanese blooms was won by Mr. M. C. Cannon, gardener to A. C. E. Howeson, Esq., of Ditton Hall Manor. This carried with it the Gold Medal of the National Chrysanthemum Society and the first prize. The Hodgson Challenge Cup for twelve Japanese blooms went to a new exhibitor, Mr. Manwaring, gardener to H. Becker, Esq., Surbiton; this exhibit also wins an N.C.S. Silver Medal and the first prize. There was no competition for the Bond Challenge Cup and N.C.S. Silver-gilt Medal, offered for a group of Single-flowering varieties, so the Cup will be held for the year by Mr. Weaver, gardener to Lady Juliet Duff, Coombe Court, Kingston, for a very fine exhibit of sixty dishes of hardy fruits.

Four groups of Chrysanthemums in pots were staged, and Mr. Pike, gardener to E. L. Ralli, Esq., Woodlands Park, Leatherhead, was placed first. His flowers were large and well-coloured. Mr. Bonner, gardener to G. Wrigley, Esq., Gloucester Lodge, Kingston, was second with plants that were well-grown and better grouped, but the flowers were not so fine; Mr. M. C. Cannon was third.

Amateurs who do not employ professional aid always show well at Kingston. Mr. C. Hawkins of Kingston won the Cup offered by F. G. Penny, Esq., M.P., for nine Japanese blooms with some very fine flowers; the N.C.S. Certificate for the best exhibit staged by an amateur also accompanied the Cup in this class.

There were seven exhibitors in the class for three Japanese blooms, excluding white and yellow varieties, and Mr. C. Morris, gardener to E. Parsons, Esq., St. Lawrence, Thames Ditton, won the first prize in a keen competition. The N.C.S. Certificate for the best bloom in the show was awarded to Mr. M. C. Cannon for a very fine flower of Ajax. The best bloom in the amateurs' classes was Wm. Rigby, shown by Mr. E. Wildman, of Teddington.

In the class for three yellow Japanese blooms, Mr. Gill, gardener to C. P. Bennett, Esq., Leigh Court, Cobham, Surrey, won the first prize.

Vegetables were well shown, and some of the exhibits from cottagers and allotment holders excelled those arranged by professional growers.

Messrs. Keith Luxford and Co. showed a non-competitive group, comprising some very fine Chrysanthemum blooms tastefully arranged with coloured foliage.

Mr. A. G. Vinten, of Balcombe, staged some very brightly-coloured blooms in large bunches including some very fine single varieties, and Messrs. L. R. Russell, Ltd., Richmond, exhibited a group of berried plants, Ericas, Tree Ferns and similar plants.

LEEDS PAXTON.

With the closure of many private establishments and the reduction of many more in the Leeds district, gardening has fallen upon lean times. This year also there has been the additional handicap of an unfavourable and very late season. Under the circumstances, therefore, the thirty-fourth Chrysanthemum show of the Leeds Paxton Society, which was held in the Town Hall on November 11 and 12, was an exceedingly creditable one. Chrysanthemums have shared in the general lateness of the season, and the local blooms were, as a whole, lacking, to some extent, in substance and colour ; indeed, they were completely eclipsed in the premier classes for twenty-four and twelve blooms by Mr. Usher's splendid stands from far-away Blandford.

Vegetables, too, were sparsely represented, and of hardy fruit there was very little. Still, entries were rather more numerous than usual, being nearly three hundred in number. Of these, rather more than two hundred were from exhibitors living in the immediate neighbourhood of the Yorkshire city.

In the open classes for cut Chrysanthemums there were four entrants for twenty-four Japanese in not less than eighteen varieties. Honours went to Sir R. Baker (gr. Mr. A. G. Usher), Blandford, Dorset, who had a massive, bright, and level lot of such varieties as Mrs. G. Monro, Mrs. A. Davis, Mrs. W. Rigby and Freda Jones, particularly strong. The last-named variety received the verdict as being the premier bloom in the show. Messrs. Burton and Sons, Slaymaker Nurseries, Elland, were placed second with quite a good stand ; and J. J. Hunt, Esq. (gr. Mr. T. Parkin), Grimston Court, York, third.

In the competition for twelve Japanese blooms the same exhibitors figured, and the order of awards remained the same as in the larger class.

In the local classes there was only one stand, from W. Penrose Green, Esq. (gr. Mr. C. Shaw), Roundhay ; and only one set of twelve blooms —from Harold Groves, Esq. (gr. Mr. A. Welbourne), Wyther Lodge, Armley. The first prize was awarded in each case.

The classes for decorative combinations of Chrysanthemums brought out some tasteful and effective vases, epergnes and tables. Mention may be made especially of a charming table in which the Single Mary Richardson set up with Asparagus deflexus figured. This was shown by T. W. Paul, Esq. (gr. Mr. F. Stables), and received the first prize in its class. Mr. Stable was also first in the competition for an epergne of Chrysanthemums.

The classes for groups of Chrysanthemums, for many years a feature of the Leeds Show, brought out some groups which were good in every way. F. S. Banks, Esq., was placed first here, and P. Cardwell, Esq., Doyfield, Healey, Batley, second.

The class for a trade exhibit arranged for effect and not exceeding ten feet by six feet in dimensions, resulted in a curious position. The first prize was awarded to Mr. T. M. Petch, Highfield Nursery, Bradford, for a group of ornamental stove plants arranged with the taste and skill usually displayed by this exhibitor. The second prize fell to a group of fruits, chiefly Apples, staged by Mr. C. Gregory, Chilwell, Notts.

Miscellaneous exhibits were comparatively few and reflected the leanness of the season. A Gold Medal was awarded to the University of Leeds (Horticultural Section), for a display of Apples, bottled fruits, and examples of insects of special interest to growers of hardy fruits. All the Apples on this stand were from the Fruit Demonstration Centre at Osgodley, near Selby.

Mr. H. Carter, Bardsey ; Mr. Harold Lawdon, Lawnwood, Leeds ; and Mr. T. Carter, Headingley, Leeds, had groups of hardy evergreen shrubs and clipped trees, in which the common Box figured largely. It is interesting to note that the demand for such samples of topiary work is on the increase in the district, and that these trimmed and trained specimens find a ready sale.

LANCASTER HORTICULTURAL.

The tenth exhibition of Chrysanthemums, held on November 9, by this Association, produced a fine display and secured a good attendance. The new Mayor (Councillor E. C. Parr), a late Secretary of the show, performed the opening ceremony, at which Chief Constable Harriss (President) presided.

Some very fine blooms were on view and a massive group from the Corporation Parks (gr. Mr. J. Dearden) of Chrysanthemums, Salvias and foliage plants was a fine effort. Sir Norval Helme's (gr. Mr. T. Atkinson) winning group contained well-finished flowering plants, and he again won the Cup which he won outright last year and returned. Mr. F. Smith won the Lady Storey Rose Bowl for twelve Japanese bloom, and the Alderman Jackson Cup for the most bloom points in the open classes. Mr. E. Boadley won outrghit the Snelson and Waters' Cup for three vases in the non-professional classes, while Miss Brighouse won Alderman I. J. Curwen's Cup for the most points in the fruit and vegetable classes.

In the plant classes, the chief prize-winners were Mr. F. Smith, Sir Norval Helme, Mr. J. Dearden, Mr. I. Winder and Mr. S. Carney, and they also won many awards in the cut bloom classes.

The premier bloom in the open classes was Queen Mary, shown by Mr. F. Smith ; and in the non-prefessional classes R. C. Pulling, shown by Mr. S. Carney was the leading flower. The best hand bouquet was shown by Mr. E. Boardley, and the best epergne by Mrs. T. Clayton, with Mrs. Emmott a good second. Major Milburne led for Begonias, and Sir Norval Helme for Primulas. Some fine fruits and vegetables were shown, the chief prize winners being Mr. W. Robinson, Miss Brighouse, Messrs. Nash and Son (Taunton), Mr. J. Kelsall, Mr. W. Cross, Mr. R. C. Brighouse, Mr. R. C. Slack, Mr. J. Jackson, and Mr. C. Fox.

ROYAL HORTICULTURAL.

The following awards have been made to the undermentioned flowers by the Council of the Royal Horticultural Society after trial at Wisley.—(A) Award recommended for garden ; (B) Award recommended for exhibition purposes ; (C) Award recommended for cutting.

Gladioli.

Awards of Merit.

Large-flowered Varieties :—*L'Immaculee,* (A, and B), sent by Messrs. W. J. Unwin, Messrs. Morris and Messrs. Dobbie and Co. ; *Imperator* (A, B, C), sent by Messrs. Hewitt and Co. ; *Vesta Tilley* (A), sent by Mr. Van Zanten ; *Etendard* (A), sent by Messrs. Dobbie and Co. and Messrs. R. H. Bath, Ltd. ; *Madame Mounet Sully* (B), sent by Messrs. Mauger and Son ; *Golden Measure* (A), sent by Messrs. W. J. Unwin, Messrs. Grullemans, Messrs. J. Kelway and Son, and Messrs. R. H. Bath, Ltd. ; *Sunspot* (A), sent by Messrs. J. Kelway and Son ; *Sunset* (A, C), sent by Messrs. Dobbie and Co. ; *Osalin* A), sent by Mr. C. Salbach ; *Hohenzollern* (A), sent by Messrs. Dobbie and Co. ; *Prince of Wales* (A, B, C.), sent by Messrs. Dobbie and Co., and Mr. Van Zanten ; *Phaenomen* (B, C), sent by Messrs. Konijnenburg and Mark ; *Nancy Hanks* (A, C), sent by Mr. C. Salbach ; *Early Sunrise* (A, B, C), sent by Mr. Van Zanten, Messrs. W. J. Unwin and Messrs. Dobbie and Co. ; *Halley* (A, C), sent by Messrs. Dobbie and Co. ; *Odin* (A, B, C), sent by Messrs. E. Webb and Sons, Messrs. R. H. Bath, Ltd., and Messrs. Morris ; *Thos. Edison* (A, B, C), sent by Messrs. R. H. Bath, Ltd., Messrs. Dobbie and Co., Mr. Prins, and Messrs. Morris ; *Trudell Grotz* (B), sent by Messrs. R. H. Bath, Ltd. ; *Speculant* (A), sent by Mr. Van Zanten ; *Crimson Glow* (A, B, C), sent by Messrs. W. J. Unwin, Messrs. R. H. Bath, Ltd., and Messrs. Grullemans ; *Flaming Sword* (A, B, C), sent by Messrs. R. H. Bath, Ltd., Mr. Van Zanten and Messrs. Dobbie and Co. ; *Brilliant* (A, B, C), sent by Messrs. Dobbie and Co., Mr. Van Zanten and Messrs. R. H. Bath, Ltd ; *Fair King* (A, B, C), sent by Messrs. R. H. Bath, Ltd., and Mr. Van Zanten ; *Pride of Hillegom* (B), sent by Mr. Van Zanten and Messrs. Dobbie and Co. ; *Red Empress* (A,B,C), sent by Messrs. Nieuwenhuis ; *Energic* (A, B), sent by Messrs. Dobbie and Co., Messrs. W. J. Unwin, Messrs. R. H. Bath, Ltd., Mr. Van Zanten and Messrs. Morris; *Heinrich Kausleiter* (A), sent by Messrs. R. H. Bath, Ltd. and Mr. Van Zanten ; *Camillo Schneider* (A), sent by Messrs. Konijnenburg and Mark and Messrs. W. Pfitzer and Son ; *Byron L. Smith* (A, B, C), sent by Messrs. R. H. Bath, Ltd. and Messrs. W. J. Unwin ; *Sweet Lavender* (A, C), sent by Messrs. R. H. Bath, Ltd. and Mr. G. Churcher ; *Sparkler* (A), sent by Messrs. Dobbie and Co. ; *Baron J. Hulot* (A), sent by Messrs. Morris, Messrs. Dobbie and Co., Messrs. E. Webb and Sons, and Mr. Van Zanten ; *Royal Robe* (A), sent by Messrs. J. Kelway and Son ; *Purple Glory* (A, B, C), sent by Messrs. W. J. Unwin ; *Cecilia* (B), sent by Mr. A. J. Bliss ; *Triumph* (A, B, C), sent by Messrs. Konijnenburg and Mark.

Primulinus grandiflorus :—*La Lys* (A), sent by Messrs. R. H. Bath, Ltd. ; *Joannita de Castro* (A), sent by Messrs. R. H. Bath Ltd. and Messrs. W. Pfitzer and Son ; *Sunnymede* (A), sent by Mr. G. Churcher ; *Revue* (A, B C), sent by Mr. G. Churcher ; *La Consance* (A), sent by Messrs. R. H. Bath, Ltd. ; *Favourite (Krelage's)* (A, B, C), sent by Mr. Prins, Messrs. R. H. Bath, Ltd. and The Netherlands G. S. ; *L'Yser* (A), sent by Messrs. R. H. Bath, Ltd. ; *Butterboy* (A, B, C), sent by Messrs. Kundred, Messrs. R. H. Bath, Ltd. and Messrs. Lowe and Gibson ; *Gelyce* (A, B), sent by Mr. G. Churcher ; *Ada de Poy* (A), sent by Mr. C. Salbach ; *Ethelyn* (A, C), sent by Mr. G. Churcher ; *Salmon Beauty* (A), sent by Mr. Amos and Messrs. R. H. Bath, Ltd. ; *Rudolph Hertzog* (A), sent by Messrs. R. H. Bath, Ltd.

Primulinus.—*Souvenir* (A, B, C), sent by Messrs. Morris, Messrs. R. Veitch and Son, Messrs. Barry and Sons, Messrs. Dobbie and Co., Messrs. C. J. Van Tubergen ; Messrs. E. Webb and Sons, Mr. A. Dawkins, and Messrs. R. H. Bath, Ltd. ; *Zanthia* (A, B, C), sent by Mr. Amos, Messrs. Van Tubergen and Messrs. R. H. Bath, Ltd. ; *Orange Queen* (A), sent by The Netherlands G. S., Messrs. E. Webb and Sons, Messrs. Van Tubergen, Messrs. Konijnenburg and Mark, Messrs. Dobbie and Co., Messrs. Barr and Sons, Messrs. R. H. Bath, Ltd., Messrs. W. Pfitzer and Son ; *Bernard Kuhn* (B, C), sent by Messrs. R. H. Bath, Ltd. ; *Nydia*, sent by Messrs. W. J. Unwin ; *Rosandra* (*syn. Rosaura*) (A), sent by Messrs. W. J. Unwin, Messrs. C. J. Van Tubergen, Messrs. R. H. Bath, Ltd., The Netherlands G. S. and Messrs. Dobbie and Co. ; *Sphinx* (A, C), sent by Messrs. R. H. Bath, Ltd., Mr. A. Dawkins, The Netherlands G. S., Messrs. C. J. Van Tubergen and Messrs.

Dobbie and Co.; *Athalia* (A), sent by Mr. Amos and Messrs. R. H. Bath, Ltd.; *Fire Queen* (A, B), sent by Messrs. R. Veitch and Son and Messrs. Barr and Sons; *Scarlet Cardinal* (A), sent by Messrs. C. J. Van Tubergen, Messrs. Niewuenhusen, The Netherlands G. S., Messrs. Dobbie and Co. and Messrs. R. H. Bath, Ltd.; *Topaz*, sent by Messrs. Barr and Sons and Messrs. R. H. Bath, Ltd.

Highly Commended.

Large-flowered Varieties.—Painted Lady (A)sent by Messrs. J. Kelway and Son; La Lune (A), sent by Mr. Van Zanten; A. B. Kundred (A,C), sent by Messrs. R. H. Bath, Ltd.; Mrs. H. E. Bothin (A), sent by Messrs. R. H. Bath, Ltd.; Princess America (A), sent by Mr. C. Elliott; Venus (A, C), sent by Mr. Van Zanten and Messrs. Dobbie and Co.; Panama (A), sent by Messrs. Dobbie and Co. and Mr. Van Zanten; Mrs. Leon Douglas (C), sent by Messrs. W. J. Unwin; Pink Perfection (A), sent by Messrs. W. J. Unwin, Messrs. Dobbie and Co., and Messrs. Morris; Dr. Van Fleet (C), sent by Messrs. W. J. Unwin and Messrs. R. H. Bath, Ltd.; Elizabeth Tabor (A), early, sent by Messrs. W. J. Unwin and Messrs. R. H. Bath, Ltd.; Karl Volkert (A, C), sent by Messrs. R. H. Bath, Ltd. and Messrs. W. Pfitzer; Aurora (A, C), sent by Mr. Van Zanten; Rose Ash (A), sent by Messrs. W. J. Unwin, Messrs. R. H. Bath, Ltd. and Messrs. Hewitt and Co.; Cracker Jack (syn. Gipsy Queen) (A), and Gipsy Girl (A), sent by Messrs. R. H. Bath, Ltd. and Messrs. Dobbie and Co.; the last two were considered to be alike; Herada (A), sent by Messrs. W. J. Unwin; Plumtinte (A), sent by Mr. C. Elliott; Catharina (A, C), sent by Messrs. R. H. Bath, Ltd., Messrs. Morris, and Messrs. Dobbie and Co.; Faust (A), sent by Messrs. Dobbie and Co. and Mr. Van Zanten; Paul Pfitzer (A), sent by Messrs. Konijnenburg and Mark; Duchess of York (syn. Blue Bird) (A), sent by Messrs. R. H. Bath, Ltd., Messrs. Grullemans, Mr. Van Zanten and Messrs. Dobbie and Co.; Restauration (A), sent by Mr. Van Zanten; Splendour (A), sent by Mr. A. J. Bliss; Anna Everius (A), sent by Messrs. R. H. Bath, Ltd., Messrs. W. J. Unwin and Messrs. Hewitt and Co.; Mrs. Dr. Hauff (A), sent by Messrs. R. H. Bath, Ltd., Messrs. W. J. Unwin and Messrs. Grullemans; Czar Peter (A, C), sent by Messrs. Dobbie and Co., Messrs. R. H. Bath, Ltd., and Mr. Van Zanten; Jacoba van Beieren (B), sent by Messrs. R. H. Bath, Ltd., Mr. Van Zanten and Mr. Prins; Johanna (A), sent by Mr. Van Zanten.

Primulinus grandiflorus: — Enchantress (A, C), sent by Messrs. Kundred; Myrtle (A), sent by Messrs. Grullemans, Messrs. Dobbie and Co. and Messrs. R. H. Bath, Ltd.; L'Ecaillon (A), sent by Messrs. R. H. Bath, Ltd.; Ming Toy (A), sent by Messrs. Kundred and Mr. G. Churcher; Anamosa (A), sent by Messrs. R. H. Bath, Ltd.; Copper Bronze (A), sent by Messrs. Kundred; La Vezouge (A), sent by Messrs. R. H. Bath, Ltd.; Jewell (C), sent by Messrs. W. J. Unwin; L'Orillon (A) sent by Messrs. R. H. Bath, Ltd.; Arden (A), sent by Messrs. R. H. Bath, Ltd.; Alice Tiplady (A), sent by Messrs. R. H. Bath, Ltd., The Netherlands G. S., Mr. Amos, Messrs. Barr and Sons and Messrs. Dobbie and Co.; Midsummer Dream (A), sent by Messrs. R. H. Bath, Ltd., Messrs. Lowe and Gibson and Messrs. Kundred.

Primulinus.—Yolande (A, C), sent by Mr. A. J. Bliss; Sedan (A), sent by Messrs. R. H. Bath, Ltd.; Marjoletti (A), sent by Messrs. Grullemans; Sunrise (A), sent by Messrs. Grullemans, Messrs. R. Veitch and Son, and Messrs. Barr and Sons; Gold Else (A, C), sent by Messrs. R. H. Bath, Ltd.; Sylvia (A, C), sent by The Netherlands G. S.; Lascelles (A, C), sent by Mr. Prins; Altair (C), sent by Messrs. R. H. Bath, Ltd., and Messrs. Kundred; Niobe (A), sent by Messrs. R. H. Bath, Ltd., Messrs. Barr and Sons, Messrs. C. J. Van Tubergen and Messrs. Dobbie and Co.; Clio (A), sent by Mr. G. Churcher; Arlon (A), sent by Messrs. R. H. Bath, Ltd.; Icarus (A), sent by Messrs. R. H. Bath, Ltd. and The Netherlands G. S.

Commended.

Large-flowered:—White City (A), sent by Messrs. R. H. Bath, Ltd.; Albatros (A), sent by Messrs. Konijnenburg and Mark; Flora (A), sent by Messrs. R. H. Bath, Ltd., and Messrs. Dobbie and Co.; Sir T. S. Hope-Simpson, sent by Messrs. J. Kelway and Son; Orangetinte (A, C), sent by Mr. C. Elliott; Bleriot (A), and Dawn (A), sent by Messrs. Dobbie and Co., Mr. Van Zanten, Messrs. W. J. Unwin, Messrs, R. H. Bath, Ltd., Messrs. Grullemans and Mr. Van Zanten; these two last were considered to be alike; War (A), sent by Messrs. Dobbie and Co.; and Carrick (A), sent by Messrs. Dobbie and Co.

HULL AND EAST RIDING CHRYSANTHEMUM.

This well-known north country Society held its twenty-seventh annual exhibition in the City Hall, Hull, on November 16 and 17.

The City Hall and its corridors were well-filled with groups of plants, chiefly Chrysanthemums, and these, together with an excellent display of vegetables, made a show of which Hull may well be proud. The various rooms of the Art Gallery were also utilised for the purpose of displaying table decorations and other classes of an artistic character, besides Chrysanthemums in vases, and fruits of a diverse character. The show was opened by the Lord Mayor of Hull, supported by a large company of the Society's friends.

There was only one competitor in the class for a group of Chrysanthemums interspersed with other flowering and foliage plants, and this excellent exhibit won first prize for Mr. Arnold Reckitt, Westerlands, Elongton (gr. Mr. W. P. Barnes). Several other groups to correspond with this competitive one were put up by the Parks Department under the supervision of Mr. H. B. Witty, and these added materially to the attractiveness of the show.

The class for a mirror group of Chrysanthemums, miscellaneous flowers and foliage, arranged on a ground space not exceeding twelve feet square, is always a great feature of these shows. A mirror about three feet wide by seven feet high, with a shelf at the back (seven inches wide and five inches below the top) was provided in each case by the Society. First prize was won by the Rt. Hon. T. R. Ferens (gr. Mr. A. C. Storey), whose display was most artistic and of high quality. Single Chrysanthemums were used effectively, together with Begonias and highly-coloured foliage plants. Captain J. H. Broadley, Walton House, Brough, won second prize, and he also used Single Chrysanthemums, Begonias and dainty foliage plants. Third prize was awarded to Mr. A. D. Hall-Watt Bishoup, Burton Hall, Beverley (gr. Mr. H. Barratt).

Among three competitors in the class for twenty-four Japanese blooms, in not fewer than eighteen varieties, shown on boards, first prize was won by T. W. G. Hewitt, Esq. Weelsby Old Hall, Grimsby (gr. Mr. F. J. F. Fleming). The varieties worthy of note were Lady Talbot (2), Mrs. B. Carpenter (2), L. Brunton, Mrs. R. L. Kelly, Julia, Mrs. J. Gibson, Red Majestic (2), and Majestic (2)—one of these blooms being the best bloom in the show.—Mrs. R. C. Pulling, Mrs. A. Holden (2), Yellow Majestic Queen Mary, Thalia, Princess Mary, Belle Chinoise, Miss Dunston and His Majesty. A very creditable lot secured second prize for Mr. A. D. Hall-Watt, whose blooms of Mrs. B. Carpenter, Julia, R. C. Pulling, Norman Davis, Mrs. A. Holden and Belle Chinoise were noteworthy. Mr. J. W. Backhouse, The Bar, Beverley, was awarded third prize.

The class for twelve Japanese blooms in not fewer than nine varieties, provided another good display. Here again Mr. Hewitt excelled, winning first prize with superb blooms, the better sorts being Lady Talbot (2), Majestic (2), Red Majestic (2), Princess Mary, Mrs. R. C. Pulling, Mrs. A. Holden, Mrs. B. Carpenter, Julia and Queen Mary. Mrs. Arthur Wilson, Tranby Croft, Hull, was awarded second prize for a grand lot of flowers, including Mrs. Algernon Davis, Frances Jolliffe, T. W. Pockett, Julia, Prince Albert and Red Majestic. Third prize was won by Mr. Hall-Watt.

The four exhibits in the class for four vases of three Incurved blooms, in four distinct varieties, one variety in each vase, resulted in Mr. J. Armitage, Clava, Harlow Oval, Harrogate (gr. Mr. R. Jones), winning first prize with Progress, Mr. P. Wiseman, Clara Wells and Advance. Smaller blooms of merit secured second prize for Mr. Hall-Watt, and, with large, unfinished blooms, Mr. J. J. Sears, Glenrosa, New Waltham, Grimsby, was placed third.

There were only two exhibits in the class for one vase of three yellow Japanese blooms, and in this case Mr. Hewitt was again placed first, with good blooms of R. C. Pulling. With blooms of Queen Mary, Mr. Hall-Watt gained second prize. With three fair specimens of Mrs. B. Carpenter, in the class for one vase of a pink Japanese sort, Mr. Hewitt was awarded first prize, and with Nan Luxford, Mr. Hall-Watt was placed second. For a vase of three blooms of a dark or bronze Japanese variety, Mr. Hewitt won first prize with Majestic in grand form, and Mr. Hall-Watt followed.

In the class for six distinct Japanese varieties, three blooms in each vase, first prize was won by Mr. Hewitt, who was closely followed by The Rt. Hon. T. R. Ferens, Mr. Hall-Watt being placed third. For two vases of three Japanese, blooms, one variety in a vase, Mr. Hewitt again led, showing Mrs. B. Carpenter and Mrs. A. Holden; Mr. Hall-Watt was awarded second prize.

An interesting class was that for nine vases of five blooms of disbudded Decorative Chrysanthemums, in nine varieties, one variety in each vase. Flowers exceeding six inches in diameter were not eligible. A good first prize set was shown by Mr. J. W. Backhouse, who staged Jean Pattison, Blanche de Poitou, Ivy Gay, Durban, Cranfordia, H. W. Thorp, Sunshine, and others. The second prize was won by Mr. Hall-Watt, who had fine blooms of H. W. Thorp, In Memoriam, Sorcerer and Romance.

Good blooms were shown in the class for nine vases of disbudded Single Chrysanthemums, distinct varieties, one variety in each vase. The winner of the first prize was Mr. R. Thompson, Highgate, Beverley, whose best varieties were Edith Dymond, H. E. Smith, Molly Godfrey, Sandown Radiance, Robert Collins, Hilda Shoebridge, Susan, Golden Seal, and Mrs. Catlow (yellow).

Prizes in the class for a large vase of Chrysanthemums arranged for effect, with any kind of foliage, were well contested, and a well-arranged exhibit of Singles won the chief award for Mrs. Edwin Robson, Sutton House, Sutton. Second prize was awarded to Mr. Hall-Watt for a rather unfinished arrangement, while a lightly arranged vase of Decorative Chrysanthemums secured third prize for Mrs. C. Bilton, Kingstree House, Cottingham.

The local classes were well filled, those for Single Chrysanthemums being noteworthy. The same remarks apply to the classes open to amateurs only, the competition in the classes for Single Chrysanthemums being well filled with excellent flowers

Great interest centred in the class for a dessert table laid for six persons, decorated with Chrysanthemums only The tables were placed down the whole length of one of the rooms of the Art Gallery and were a source of much interest to the visitors. The winning table was arranged by Mrs. J. Cumming, Beverley Road, Hull, who secured the trophy given by the Rt. Hon. T. R. Ferens. This table was lightly arranged with crimson Single Chrysanthemums, fruits, [etc., and was a very laudable effort. Second prize was well won by Mrs. Edwin Robson, Sutton, with a charming arrangement of yellow Singles and beautiful fruit, and third prize went to Mrs. E. Tinsley Sissons, Cottingham.

Baskets and epergnes were shown quite freely in their respective classes, but there was nothing of outstanding merit in any of them.

In the open class for eight distinct kinds of vegetables, a good collection won first prize for Mr. H. E. Hagues, Cottingham; second prize was secured by Mr. F. Bearpark, Hessle; and third prize was awarded to Mr. S. W. Hopper, Northfield, Cottingham. Local classes and allotment holders' classes were well contested, and produce of splendid quality generally shown.

In the open class for two bunches of white Grapes, first prize was well won by Lord Hotham, Dalton Hall, Beverley, and second prize by Mr. Arthur Wilson.

A similar class for black Grapes resulted in a keen contest, beautiful, well-coloured Gros Maroc winning first prize for Lord Hotham; second prize was won by Mr. Hall-Watt with Alicante, and third prize by Captain J. H. Broadley. Dessert and culinary Apples were shown extensively and well, high quality being generally represented.

It is quite impossible to mention more than a tithe of the many fine exhibits at Hull; it must suffice, therefore, that the show of the present season well maintained the traditions of the Hull Society.

Messrs. Sutton and Sons were awarded a Gold Medal for an exhibit of vegetables, comprising about 110 dishes, all of splendid quality and superbly arranged. A similar award was made to Messrs. E. P. Dixon and Sons, Ltd., for a highly attractive exhibit of Roses, Carnations, Chrysanthemums, Heaths, Cyclamens and other seasonable subjects, all displayed most effectively.

A Silver-gilt Medal was awarded to a group of new and choice Chrysanthemums staged by Messrs. Keith Luxford and Co., and a similar award went to Messrs. Arthur Train and Sons, who arranged a handsome group of Chrysanthemums, Palms, etc., in front of the platform of the City Hall.

Silver Medals were awarded to Messrs. D. Toyne and Sons, for a group of shrubs and Chrysanthemums; and Messrs. Linsleys and Daughten, for a beautiful display of floral designs in Chrysanthemums.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

Mr. T. R. Butler presided at the Monthly Meeting of this Society, held in the R.H.S. Hall, on Monday, November 14. Twelve new members were elected. The death certificates of two deceased members were received, and the sum of £83 7s. 11d., plus £40 funeral benefits, was passed for payment to their respective nominees. The sick-pay for the month on the Private side amounted to £92 7s. 2d., and on the State Section to £63 15s. 0d.; Maternity Benefits came to £14 10s. 0d. £15 8s. 9d. was paid in grants to ten members for optical treatment, and £34 15s. 0d. to six members for dental treatment; sixteen other cases were considered.

AYRSHIRE CHRYSANTHEMUM.

The twenty-first annual show of winter-flowering plants, flowers, fruit and vegetables, promoted by the Ayr Chrysanthemum Society, was held in the Carrick Halls on the 16th inst. Compared with last year, the number of entries indicated an increase.

In the gardeners' section, Mr. Robert J. Clark, Ayr, won the Pollock Cup with two well-grown specimens of Yellow Thorpe, and the same competitor was successful in three other plant classes, Mr. George McCartney, Monkton, being the runner-up on each occasion. The latter excelled in the class for an Incurved variety, and he also provided the best pot plant in the show.

Competition was keenest in the classes for cut blooms. Here Lt.-Col. Charles Brook (gr. Mr. Thomas Cload), Kinmont, Annan, beat Mr. R. Allan, Whiting Bay, the present holder of the Land of Burns Chrysanthemum Cup, awarded to the four best vases containing three specimens each of Japanese varieties; his outstanding blooms were Majestic, Julia, Mrs. Spencer Chichester, Golden Champion, Princess Mary, Mrs. H. Wells, Mrs. R. H. Marsham, His Majesty and Mrs. B. Carpenter. He likewise excelled over Mr. Allan in the single vase of white, yellow and pink classes, and he staged the best examples of new varieties introduced wince 1924, the trio consisting of Autumn Tints, T. W. Pockett and Mrs. H. Wells. He suffered defeat in the crimson class at the hands of his Arran opponent, who was represented by three grand flowers of His Majesty. Mr. Allan also secured the first prize for twelve varieties shown on boards, and a similar honour awarded for four blooms of Incurved varieties. The vase of Mrs. Carpenter with which Mr. Cload won in the pink class, provided the best individual bloom in the show. It measured twenty-nine inches in circumference.

The Silver Cup for twelve blooms shown on boards in the competition confined to Ayrshire, went to James Watson, Esq. (gr. Mr. W. Chorley), Stanecastle, Irvine, while Mr. R. Rae, Wentworth, Ayr, obtained the leading awards for undisbudded and disbudded Single Chrysanthemums, two vases of Decorative sorts, and for a vase arranged for effect.

In the amateurs' section, Mr. Norman Jamie, Ayr, won five of the six first prizes in pot plant classes, the remaining class for a Single variety being credited to Mr. Peter Spence, Ayr, who staged an outstanding plant of Raleigh. Mr. James Hutchinson, Kilmarnock, obtained the custody of the Society's Silver Cup awarded to the best cut blooms, and Mr. J. W. Kerr's example of R. C. Pulling had the honour of being selected as the best bloom in the amateurs' classes. Although not fully developed it measured twenty-four inches in circumference.

Apart from the Apple classes, the display of fruits was small, but the vegetable classes were well-filled and the quality was superior. The winners of the two classes for collections were Mr. John S. Cowan, Ayr, and Mr. Gilbert McIlwraith, Beith.

Messrs. William Marshall and Son, Bellisle, showed an interesting collection of twenty-nine varieties of Chrysanthemums, while Messrs. Austin and McAslan, Glasgow, were represented by a collection of Cyclamen seedlings and Carnations, which were effectively grouped. Messrs. Samson's, Ltd., exhibited shrubs, and the stand of Messrs. Learmont, Hunter and King was notable for a large and varied collection of richly-coloured Apples.

Obituary.

J. C. Newsham—The sad news has reached us of the death of Mr. J. C. Newsham, Principal of the Monmouthshire Agricultural Institution at Usk. Mr. Newsham passed away on Sunday, October 30, at his residence at Rhadyr, near Usk. He was extremely popular in South Wales and in agricultural circles generally, and all who had the pleasure of his acquaintance will very deeply regret his demise at the early age of fifty-five years. He commenced his business career as a horticulturist, and spent some time at Kew and other well-known establishments before becoming a lecturer in horticultural and agricultural subjects. In 1900, he became Principal of the Hampshire Agricultural Institute at Old Basing, and fourteen years later was appointed Principal at Usk, where the Institution was then becoming established under the scheme for the administration of the William Jones Endowment. Mr. Newsham transformed the Rhadyr Farm into an establishment especially suitable for demonstrations of market gardening, dairying, poultry-keeping and live-stock, and in 1923, when the work at Usk was co-ordinated with that of the county of Monmouthshire, he was appointed County Agricultural Organiser. His enthusiasm and energy were unbounded, and in addition to his duties at Usk he was frequently called upon to act as examiner at the Harper Adams College and other institutions. He had the pen of a ready writer and is well-known as the author of numerous useful books, including *The Horticultural Notebook; Dairy Farming; Agriculture: Theoretical and Practical; Propagation and Pruning;* and *Agricultural Arithmetic.*

ANSWERS TO CORRESPONDENTS.

Carnation Rust.—*C. A. W.* Your Carnations are attacked by rust. The plants may be sprayed with potassium sulphide, but if the disease is very severe your best plan is to burn the diseased plants and obtain a fresh stock.

Furnishing Flower Beds.—*G. A. G.* As such an early display is required, you will need something that can be put out in flower, or just coming into flower. Bedding Pelargoniums are most useful for this purpose as they may be put out in flower. If you use scarlet varieties, you could plant the grey-foliaged Centaurea with them. Antirrhinums would, however, possibly suit your purpose better, as you may have plenty of variety, the intermediate type being best for bedding purposes. If seeds are sown indoors early in the year and the plants well-grown they should be ready for planting out by the end of May with well-developed buds, which should be in flower about the middle of June, and give a good display for the period you require. There is a wide range of colours to suit every taste. The dwarf Dahlias, Coltness Gem, if started early, may also be put out in flower at the end of May. Dinkie, a yellow-flowered variety, is the same in every way except colour. Verbenas, also, if started early, could be put out in flower, but for this season you would be well advised to try Antirrhinums, and at the same time grow small experimental batches of other likely plants.

Grapes Failing to Finish Properly.—*T. S.* We believe the trouble is due to overcropping, and if the number of bunches is reduced another season, no doubt the vines will recover and the Grapes finish well.

Names of Fruits.—*T. E. D.* 1, Reinette Van Mons; 2, Pitmaston Pine; 3, Wyken Pippin; 4, Braddick's Nonpareil; 5, Herefordshire Pearmain; Pear Marie Louise.—*Kentish Cob.*—Golden Noble.—*W. P. C.* 1, Beauty of Waltham; 2, decayed; 3, Lord Lennox.—*T. C. W.* 1, Sandringham; 2, Cellini.—*J. S. S.* James Grieve.—*A. E. M.* 1 Benoni; 2, Dumelow's Seedling; 3, Flower of Kent; 4, Small's Admirable; 5, Yorkshire Beauty; 6, Winter Hawthornden; 7, Smart's Prince Arthur; 8, Hoary Morning; 9, Winter Strawberry; 10, Lady Sudeley.

Names of Plants.—*W. H. M.* 1, a garden variety of Naegelia; 2, Zebrina pendula; 3, Abutilon Sawitzii; 4, Coelogyne cristata; 5, Begonia metallica; 6, Achimene, too shrivelled to identify species; 7, Aechmea fulgens; 8, Draceaena Sanderiana; 9, Oplismenus Burmannii; 10, Elettaria Cardamomum; 11, Ruellia Portellae: 12, Clivia miniata.

Young Black Hamburgh Vines.—*F. A. F.* We are afraid your Black Hamburgh Vines have been in seven-inch pots too long to be of much service for forcing next year. If you wish to try a few of them, select the strongest and best ripened canes and pot them into eleven-inch pots in January, using good turfy loam with a little lime-rubble and bone-meal added. Pot firmly, afford a little bottom heat, and if they are not forced too much they may give a few bunches of moderate sized Grapes. Your best plan would be to cut down the weak vines this winter, placing them in a little steady bottom heat in January, and when they have made about two inches of growth, shake out the roots and repot into eleven-inch or twelve-inch pots in warm compost, plunging them in a steady bottom-heat of 75°. Select the strongest shoot in each case and grow the plants in a moist atmosphere, feeding them liberally when established and growing freely.

Communications Received.—J. A.—A. R. C. (Thanks for 6d. for R.G.O.F. Box.—A. F.—J. B.—Mrs. H.—F. T.—H. A. S. S.—S. R.—J. D. C.—P. D. W. —H. B. W.—W. I.—C. N.—F. G. C.—C. O'C.—S. B.—G. F. G.—J. F—C. H. M.—H. C. (Thanks for 8/- for R. G. O. F. Box).—E. C.

THE Gardeners' Chronicle

No. 2136.—*SATURDAY, DECEMBER* 3, 1927

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the past fifty years at Greenwich, 40.9.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 30, 10 a.m. Bar. 30.4. Temp. 40°. Weather, Very dull.

The Development Commission.

FEW reports issued under Government auspices make more interesting reading or contain more valuable information than those of the Development Commission, the seventh *Report** of which has recently been published. The Development Commission is an institution of which we may well be proud, for it acts as a financial benefactor to those organisations which are concerned in advancing knowledge or in improving rural conditions, and this work it does with discriminating liberality. The funds at the disposal of the Commission are in part derived from the original grant, in part from the monies provided by the Corn Production Repeal Act of 1921. They amounted in the year under review to upwards of £400,000. Nor was this the total of the funds available for agricultural research, for since the establishment of the Empire Marketing Board further financial assistance for agricultural and other institutes in this country, as well as abroad, has been forthcoming. It can therefore no longer be asserted that State aid for agricultural research is stunted. Needless to say, it must take a long time before the full effects of this liberal policy are forthcoming, for research is a plant of slow growth, and not everyone who tends it is able to induce it to bear fruit. Yet, as the present *Report* shows, each year sees a steadily increasing output of new knowledge, much of it of no inconsiderable value to agriculture and horticulture. One criticism—we hope a helpful one—we should like to make with respect to the editing of the *Report*. The Introduction contains references to some of the more interesting discoveries which have been made at the various research institutions. For example, there is one to the discovery why the spores of Stereum purpureum—the fungus of Silver Leaf disease—will not germinate during the months of June, July and August. The reader would like to know the reason, but unless he has leisure to hunt through the 150 pages of the *Report* he will not have his desires satisfied. A little more in the Introduction in the way of outstanding discoveries and observations would make it of much greater interest to the informed, but not specialist reader. We would suggest that if it is impossible in the Introduction to refer to all the chief matters of interest, then a classified index of subjects of special importance should follow on the Introduction. Of course, the specialist knows where to look for the original papers, but there are many who take a real interest in the progress of agricultural science who have neither the leisure nor the inclination to read the highly technical language in which research workers are, perforce, constrained to describe the results of their investigations. How vast, complex and interconnected are the problems which the workers in agricultural science seek to resolve is illustrated on almost every page of the *Report*. Who, for example, would have anticipated that the effect of ionised air on the fertility of Barley would depend on the amount of available phosphates in the soil? With little phosphate the ionised air depresses fertility; with more, fertility is enhanced by ionised air! Who, again, would have guessed that in the two species of smut (Ustilago levis and U. Hordei) fungi of Oats and Barley there are apparently, as occurs, of course, in other fungi, hyphae which, though outwardly of similar form are in reality of opposite sex, and that though each kind grows if fusion of the two kinds does not occur, the fungus possesses insufficient power to work its parasitic way upon its host? Or who would have ventured to guess that the drying of soil leads to a large loss of nitrates, with a possible result that unless the nitrate is restored certain tropical soils may become sterile. Almost endless are the surprises of science, and so complex are the interrelations in Nature that the surprise is not that we know so little, but that we know so much. That that knowledge shall grow and become more and more fruitful is the high object which the Development Commissioners have at heart. Those engaged in pursuing that knowledge and those who profit by it alike must be grateful to the Commission for the strenuous and discreet way in which it is fulfilling its part.

"The Gardeners' Chronicle" Almanac for 1928.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

An Increasing Trade in Bananas.—Some particulars, which have been published recently, illustrate the great importance and increasing volume of the trade in Bananas. Since 1919, Messrs. Elders and Fyffes have added twenty boats to their fleet of steamers which carry the bunches of fruit. Early in the New Year three more vessels will be commissioned, making thirty-four in all. The chief Banana supplies are grown in the West Indies, Central America, the Canary Islands, and much more recently, Brazil, where it is hoped to increase the areas considerably in the near future. The best of the western Bananas are the fruits of Musa sapientum var. Gros Michel, while those from the Canaries are of the dwarfer Musa Cavendishii.

Thunberg's South African Plants.—For the meeting of the Linnean Society held on November 17, Mr. N. E. Brown, A.L.S., had prepared a paper on "The South African Species of Iridaceae in Thunberg's Herbarium," but owing to its highly technical character only the introduction was read. In this, Mr. N. E. Brown stated that Carl Pehr Thunberg was born in 1743, and in due course became a pupil of Linné, and afterwards Professor of Botany at Upsala. He made voyages to South Africa, Java and Japan, and after his return published an account of his travels and described the plants he had collected. He sailed from Europe on December 30, 1771, and landed at Cape Town on April 17, 1772, the journey occupying fifteen weeks, in contrast with the three weeks it now takes to accomplish. Thunberg stayed in South Africa nearly three years, and sailed to Java on March 2, 1775. During his stay in South Africa he made three extensive journeys into various parts of it, and in two of them was accompanied by Francis Masson, who was sent to collect living plants for the Royal Botanic Gardens at Kew, and who first introduced many of the South African plants that now adorn our gardens and greenhouses. Thunberg sent or brought back from the Cape a large collection of dried plants which he had discovered, and described then in numerous separate pamphlets and in his *Prodromus Plantarum Capensium* and *Flora Capensis*. Many were described also by the younger Linné. This fine collection of well-dried specimens is now preserved in the Botanic Garden at Upsala.

Tree Vandals in Rome.—The amenities of the most fashionable part of the city of Rome have suffered a grievous injury through the depredations of a gang of hooligans. It seems that these evil-disposed persons entered the city a fortnight ago, soon after midnight, and cut down fifty of the finest trees in the noted Sycamore avenue, in the Via Veneto, and departed before daybreak. These trees, which grew between the former Dowager Queen's Palace and the Pincio Gate, were planted about sixty years ago, and the tallest specimens spread their branches above the principal residences.

Plane Trees in the Mall.—Although a good deal of nonsense has been written about the Plane trees in The Mall, it is quite evident that many Londoners take a very keen interest in the four rows of trees that extend from the Duke of York steps to the Victoria Memorial. It must be obvious to those who are acquainted with the growth of trees in the London area that the roots of the Plane trees in The Mall have now reached a less kindly soil than that in which they were planted and, naturally, growth is less vigorous than in former years. In all probability, however, so soon as the roots have made themselves familiar with the gravelly subsoil, growth will again improve, and it may not be very many years hence when it will be necessary to remove half the trees to allow the other half to develop. Many readers of *The Gardeners' Chronicle* will remember the fierce controversy which took place about sixteen years ago concerning the management of these self-same trees. The controversy was, however, brought to an end when the late Sir Isaac Bayley Balfour, at the request of the Government, made a report on the subject, and proved that the arboriculturists and horticulturists concerned had applied sound practical knowledge combined with scientific principles to the pruning and general management of the Plane trees in The Mall.

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* *Report of the Development Commission for the year ended* 31 *March*, 1927. H.M. Stationery Office. Price 3s. net.

A Quaint Indian Horticultural Advertisement.—A Calcutta correspondent has sent us a copy of a quaintly amusing advertisement distributed by an Indian firm of florists and seedsmen. The enthusiastically descriptive inducement to purchase Araucarias and Cypresses is worded as follows :—" Besides the grandeur, Araucaria and Cypress trees bring exquisite pleasure at the very outset to one and all at first sight near Colleges, play-grounds, new extensions in the vicinities of populous and growing cities. And any garden or park devoid of these plants look like a barren forest fit for moping owls ; while, on the other hand, any pleasure place or bower embelished by majestic conical Araucaria, birds chirping on them with melodious songs, makes hell a Heaven. Hence the pleasure that the public derive from gardens, parks or any places of recreation adorned by these evergreen trees is immeasurable and inestimable, and as such their planting is essential and indispensable."

The Cuckoo's Secret.—Following the Horticultural Club Dinner, to be held at the St. Ermin's Hotel, Westminster, on Tuesday, December 13, at 6.30 p.m. for 7 p.m., a lecture will be given by Mr. P. F. Bunyard, F.Z.S., entitled " The Cuckoo's Secret Solved." The lecture will be illustrated by lantern slides.

Belgian Florists' Social Evening.—On Saturday evening, November 19, the Belgian Florists' Association held its annual banquet and dance at the Royal Tavern, in Brussels. The tables were superbly decorated, and many important people in the horticultural world graced the gathering by their presence, including M. Van de Weyer, the President of the Association; M. Foreau, President of the Syndical Chamber of Florists in Paris; M. F. Spae, President of the Organising Committee of the Ghent Floralies, and M. Charles Pynaert. A large company partook of the banquet, and danced at the ball which followed.

Oxford Preservation Trust.—Thanks to a loan from one of its friends, the Oxford Preservation Trust has been able to acquire a portion of the Foxcombe Estate, Boar's Hill, whence a beautiful view of Oxford is obtained. About £5,000 is required, however, to complete the purchase price of £11,000. Ample additional funds are needed also for the purpose of preserving the belt of meadow and park land which surrounds the centre of Oxford, and for purchasing other tracts of land than those at Boar's Hill, from which views of the University City may be obtained.

Chrysanthemum Midge.—The attention of the Ministry of Agriculture has been drawn to the appearance in certain glasshouses in the Lea Valley of the Chrysanthemum Midge (Diarthronomyia hypogaea, F. Low), described and illustrated in *The Gardeners' Chronicle* of November 12, last (pp. 388, 389, Figs. 174, 175, 176, 177). This Midge has been known to exist in Europe on the wild Ox-Eye Daisy, but until this year it has not been known to attack Chrysanthemums in this country, though it has been a trouble to Chrysanthemum growers in the United States for some years. The Ministry states : " There is reason to believe that the pest was introduced from abroad in cuttings of the variety Monument, and all growers who have received cuttings of this variety from abroad, or from the Lea Valley district during the last two seasons, are asked to examine their plants, and if they find any suspicious galls on the stems or leaves to report the fact at once to the Ministry. The most noticeable feature of an attack by the midge is the presence of small galls or growths on the leaves. The galls are cone-shaped, about one-twelfth of an inch long, and project obliquely from the surface of the leaf. The chief risk of a spread of the pest is through the medium of infested cuttings, and it is hoped that with the co-operation of Chrysanthemum growers it may be possible to discover all existing cases and to exterminate the midge whilst its distribution is still somewhat limited. In order that the Ministry may be in a position to require preventive measures to be taken, should occasion require, an Order has been issued adding the Chrysanthemum Midge to the list of pests included in the scope of the Destructive Insects and Pests Order of 1922, and requiring imported cuttings and rooted parts of Chrysanthemums to be accompanied by an official Certificate of freedom from the pest."

Mr. Frederick J. Rose.—When commencing his gardening career under his father at Saltwood, Hythe, Kent, Mr. F. J. Rose met the late Lord Swaythling (who died in June of this year) who took a special interest in him and expressed the hope that at some future time he might employ him. At the age of seventeen, Mr. Rose became journeyman at Cobham Park, Surrey, under Mr. W. H. Honess (now of Walhampton Park, Lymington), and here he stayed for two years. Then followed a short stay at Welbeck, under the late Mr. Roberts, and from Welbeck he went to the Oxford Botanic Garden under Mr. W. G. Baker. Here he was perfectly happy and remained for just under a year, when Lord Swaythling (then Mr. L. S. Montagu) wrote offering him a position in his father's (then Sir Samuel Montagu) garden at South Stoneham House, Southampton. At first Mr. Rose was very undecided, but eventually accepted the offer and went to South Stoneham in November, 1905. In 1911, thanks to the generosity of his employers, he served at Gunnersbury House, under Mr. James Hudson, for six months, where he had every opportunity of gaining knowledge, not only from those well-kept gardens, but also by visiting Kew and other gardens in the vicinity, and the Royal Horticultural Society's fortnightly shows at Vincent Square. The first Lord Swaythling died in January of that year, and Mr. Rose returned as foreman to Lady Swaythling, who remained at South Stoneham House. Mr. T. Hall retired at the close of 1915, and Mr. Rose then took charge of the gardens, but a few months later he joined the 4th Hants. Regiment and was drafted to India, Mr. Hall returning to his charge. During two-and-a-half years' service in India he suffered severely from nephritis and enteric fever, and as a consequence of his illness he was eventually transferred to the garrison battalion of the Bedford Regiment, while his own regiment went to Palestine and afterwards to France. Mr. Rose was invalided home immediately after the Armistice, and in February, 1919, again resumed his duties at South Stoneham. The first Lady Swaythling died two weeks after his return, and South Stoneham was placed on the market. At the completion of the sale, the late Lord Swaythling offered Mr. Rose the charge of the gardens and farm at Townhill Park, adjoining South Stoneham, a position he accepted and has held ever since. Here he has had the pleasure of supervising the laying out and planting of new walled-in kitchen gardens and orchard, and the building of plant houses and vineries. In the late Lord Swaythling he had a sympathetic and generous employer who was keenly interested and found great pleasure in his garden. The two worked together in perfect harmony for six years, enlarging the gardens and creating a collection of many of the most interesting and beautiful of the new shrubs, including the best species and hybrids of Rhododendrons ; this work, fortunately, is being carried on by the present Lord Swaythling. Mr. Rose has achieved considerable reputation locally for the cultivation of Sweet Peas, hardy flowers and Grapes, but his time is so fully occupied that he has little to spare for exhibition work.

MR. F. J. ROSE.

Legacies to Gardeners.—Mr. Rowland Douglas Todd, of Greswolde House, Birmingham, who died on December 2, 1926, bequeathed £100 to his gardener, Mr. J. Bowler, if still in his service. The Earl of Winchilsea, of Haverholme Priory, Sleaford, who died on August 14, leaving unsettled property of the gross value of £13,754, bequeathed £100 to his gardener, Mr. W. Kneller.—Dame Mary Anne Quilter, of Woodhall, near Woodbridge, Suffolk, who died on September 12, leaving estate valued at £42,715, bequeathed £50 to her gardener, Mr. Brown.—Mr. W. Stewart, of Brodawel, Caerleon, who died on September 3, leaving estate of the value of £36,101, bequeathed £50 to his gardener, Mr. W. Young.—Miss M. E. Chavasse, of Alton Place, Wylde Green, Warwick, who died on October 8, leaving personal estate of the gross value of £12,723, left £50 to her gardener, Mr. George Cross.—Mr. Alex. Crossman, of Hill House, Harrow Weald, who died on October 9, bequeathed £50 to his gardener, Mr. Maline.

Mr. John Ramsbottom.—Following the promotion of Dr. L. J. Spencer to the position of Keeper of Mineralogy, Mr. John Ramsbottom has been appointed a Deputy Keeper of the Department of Botany, Natural History Museum, South Kensington.

Bird Sanctuary on Eel Pie Island.—It is reported that a part of Eel Pie Island—a well-known beauty spot and boating centre on the River Thames, near Twickenham—is to be fenced off and reserved as a sanctuary for birds.

Presentation to Mr. and Mrs. George Woodward.—Our friend and coadjutor Mr. J. George Woodward, The Gardens, Teston, Maidstone, has completed fifty-years service on the Barham Court Estate and to celebrate this event, Mr. and Mrs. Woodward, together with other employees and friends, were entertained to lunch at Barham Court by Sir Charles and Lady Warde. Presentations were also made to Mr. and Mrs. Woodward and in making them Sir Charles Warde acknowledged the loyal and faithful services rendered to himself and Lady Warde by Mr. Woodward and referred to the splendid services their guest had rendered to the parish and district. Sir Charles stated that " thanks to my friend Mr. Woodward " they had a splendid working Men's Club of which the founder was Hon. Sec. and Treasurer for twenty-five years ; moreover it was due to Mr. Woodward that they possessed a fine Parish Room. But even these efforts did not complete the list of Mr. Woodward's activities as he was still acting as Churchwarden, after thirty-five years' service, was Hon. Clerk to the Parish Council, and Assistant Overseer of the Poor. Mr. Woodward's many friends will join with us in congratulations upon his attaining a jubilee of service at Barham Court, Teston.

The Otari Open-air Plant Museum.—As our readers are already aware, an open-air native plant museum has been established near Wellington, New Zealand, for the preservation of native plants. The reservation consists of 143 acres, about one-half of which is occupied by forest, some of it being practically virgin forest. Much of the area consists of fairly steep slopes, but there are many level places of considerable size, and there is every variety of aspect—a most important feature. The lowest part of the reservation consists of a valley through which flows the Kaiwharawhara Stream, which is crossed by a bridge leading by a natural pergola into the heart of the reserve. The unforested portion will, subject to minor modifications, be devoted to (1) the flora, including both the systematic and biological sides; (2) the vegetation; (3) horticulture; and (4) restoration of the forest. A very interesting account of this open-air native plant museum has been written by J. G. MacKenzie, Director of Parks and Reserves, Wellington, and L. Cockayne, Honorary Botanist, New Zealand Institute of Horticulture, and is published in the form of a *Bulletin* (Vol. 1, No. 4) of the New Zealand Institute of Horticulture. The account is illustrated with views of the original forest, flat portions of the area, climbing plants, and the proposed site for an alpine garden.

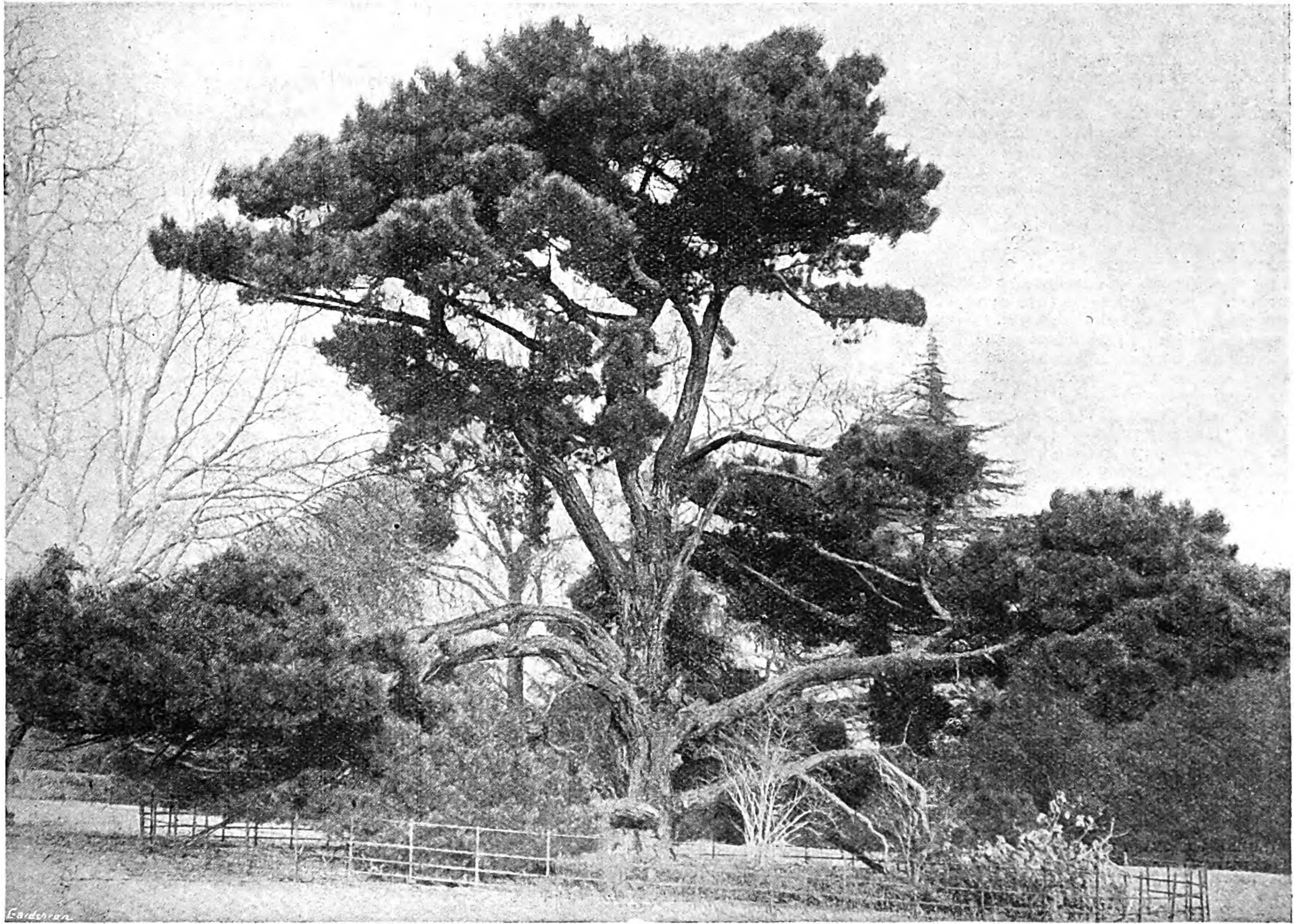

FIG. 198.—PINUS RADIATA AT PAIN'S HILL, COBHAM, SURREY.
(see p. 443).

Hardy Ferns.—Lovers of hardy Ferns will find much interesting and useful matter in Vol. V, No. 8, of the *British Fern Gazette*, recently published by the British Pteridological Society and edited by Dr. F. W. Stansfield. A few of the more important articles are those on Mendelism in Ferns, Lastrea Filix-mas variegata and its Varieties, and a resume of Mr. W. B. Cranfield's lecture given at the Horticultural Club meeting of April 5. Those who desire to obtain copies of the *Gazette* should become members of the British Pteridological Society. The Hon. Secretary is Dr. F. W. Stanfield, 120, Oxford Road, Reading.

Appointments for the Ensuing Week.—SUNDAY, DECEMBER 4: Wakefield and North of England Tulip Society's meeting. MONDAY, DECEMBER 5: Harrogate and District Horticultural Association's meeting; Romsey Gardeners' Association's meeting; Birmingham Gardeners' Mutual Improvement Association's lecture. TUESDAY, DECEMBER 6: Bolton Horticultural Society's lecture; Royal Caledonian Horticultural Society's meeting. WEDNESDAY, DECEMBER 7: Nottingham and Notts. Chrysanthemum Society's meeting; Sheffield Chrysanthemum Society's annual dinner; Wimbledon Gardeners' Society's meeting; London Gardens Guild lecture. THURSDAY, DECEMBER 8: London Gardens Guild lecture. FRIDAY, DECEMBER 9: East Anglian Institute of Agriculture's lecture; Royal Horticultural Society of Ireland meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Bourbon Rose.*—About thirty-five years ago, a French botanist, M. Breon, visited the Island of Bourbon, and found growing in a garden at St. Benoist, a Rose altogether new to him. The flowers were rosy-carmine, beautifully cupped, and the petals remarkable for their size and smoothness. Our botanist did not fail to appreciate this *nouveauté*, and sending it to Paris, it was there multiplied and scattered abroad; this was the original Bourbon Rose. It is not a species, but an accidental hybrid, supposed to have sprung up between the common China Rose and the red Four-Seasons. Some of your readers will doubtless remember the Rose Ile de Bourbon, or Bourbon Jacques—for under both these names it was disseminated; and it is from this Rose, variously hybridised, that all the Bourbon Roses have been obtained. For the first few years, most of the seedlings raised were of the same colour as the original; some were finer and many more double; one of which, Augustine Lelieur, remains a good Rose to this day. The first variation was the production of kinds of a clear and beautiful silvery tint, then of a dark purple and crimson hue, till now we have flowers as brilliant in colour and equal in form, to almost any Rose. The Bourbon Roses generally are hardy and easy of culture; the short-wooded, free-blooming kinds, require two annual dressings of manure and close pruning; they are then the most beautiful of autumn Roses, flowering better and more abundantly late in the season than in summer, fine flowers often expanding at the end of October. *W. Paul, Gard. Chron., December* 4, 1852.

Publications Received.—*Manures and Manuring*, by Frank E. Corrie; Chapman and Hall, 11, Henrietta Street, W.C.2; price 5s. net.—*Gladiolus*, by F. F. Rockwell; *Shrubs*, by the same author; The Home Garden Handbooks; Macmillan and Co., Ltd., St. Martins Street, W.C.2; price 4s. 6d. each.—*Gardens and Design*, by J. C. Shepherd and G. A. Jellicoe; Ernest Benn, Ltd., 154, Fleet Street, E.C.4; price £3 3s. net.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Oncidium cheirophorum — This desirable Orchid, one of the prettiest and most useful of all the small-flowering and dwarf-growing members of the genus, usually blooms during the late autumn and early winter, and although the bright, Buttercup-yellow flowers are small, they are produced abundantly upon arching spikes, and have a delightful fragrance. This species is easily cultivated, thriving well in small pans suspended from the roof in a cool, intermediate house. It dislikes disturbance at the roots. The best possible time to repot the plants is when the new growths are about to push forth new roots, as at this stage they receive the least possible check.

Cypripediums.—The warmth-loving Cypripediums, such as C. Stonei, C. philippinense, C. Lowii, C. Parishii, C. Rothschildianum and the numerous hybrids, such as C. Morganiae, C. I'Ansoni and C. Shillianum, which were repotted a few weeks ago, will now have rooted through the new material, and need water at the roots whenever they become dry. Those of the same section which were not repotted will be growing strongly and will need water at the roots frequently. The winter temperatures and conditions should be strictly observed. Syringing and spraying is not to be recommended during the winter as water is liable to settle inside the growths and cause decay. Although these plants require plenty of moisture at the roots whilst in active growth, an excess must be carefully guarded against. Most of them have thick, leathery foliage and are capable of withstanding a moderate degree of dryness at the roots. It is much easier at this season to wet the rooting material than it is to get it dry again, and a saturated medium means the loss of many valuable roots. Where Cypripedium flowers are appreciated, these summer-flowering kinds are valuable. Although they are not grown to the same extent as those of other sections, they are worthy of cultivation.

Winter-flowering Cypripediums.—These are now in full bloom and will continue to make a display far into the New Year. Varieties of these useful Orchids are very numerous, and improvement continues both in regard to the size, form and colour of the flowers. Some are appreciated more than others, whilst some adapt themselves better to the decorator's art than others, yet all are beautiful, and as winter-flowering subjects they are unrivalled for their lasting qualities, either as cut flowers or as plants for decorative purposes. Being of easy growth their culture may be undertaken by anyone, and in foggy districts, near large cities, there is no plant grown under glass that will better repay the trouble taken to grow them satisfactorily.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

The Onion Bed.—The site for next season's Onion crop having been chosen, no time should be lost in deeply trenching and liberally manuring the soil. Onions are deep-rooting subjects, so much so that I have, on more than one occasion, found roots at a depth of three feet. This suggests that, where possible, the ground should be trenched at least two spits deep. If the subsoil has seen daylight before, by all means bring it to the surface; if not, and if it consists of clay or gravel, it should be stirred deeply and receive additions of well-rotted manure, burnt garden refuse, road scrapings, or anything else that will improve it and make an extra larder for the roots to obtain food from. This principle of deep manuring holds good, whether the soil is trenched or only bastard trenched; I would even fork manure into the third spit, for the deeper the soil is moved the sweeter it will become; moreover, by allowing stagnant water to drain away more freely during a wet season such as the last, such soil becomes warm, while during a very dry, hot season the roots can penetrate more deeply, thus enabling the crop to withstand the effects of a prolonged drought without suffering to any degree. As the work of trenching proceeds more manure should be mixed with the soil, but this should not be placed less than one foot below the surface, or the Onions will become thick-necked. Leave the soil surface as rough and loose as possible so that the weather may act upon it. If the ground is very tenacious the top spit should be ridged. When trenching is finished, a good dressing of basic slag, at the rate of four ounces to six ounces per square yard, should be strewn over the surface; this will be washed down during heavy rains. Soil requiring lime should be dressed with this material next February, and afterwards lightly forked over.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Chrysanthemums.—As these plants pass out of flower the stems should be cut down to within eight inches of the pots, after which they should be stood on a bed of ashes in a cool house to furnish cuttings for propagation. Green fly is very partial to the young shoots, therefore it is always advisable to spray the plants with Quassia extract or some other useful insecticide to keep the shoots clean. Should mildew appear, dust the leaves with flowers of sulphur. To be successful in rooting Chrysanthemums it is necessary that the cuttings are free from both these pests before any attempt is made to propagate them. Precautions taken now will prevent disappointment later on. Late-flowering varieties should be placed in a light position in a cool house and fed occasionally with weak liquid manure.

Palms.—These are usually grown in comparatively small receptacles, consequently they will need assistance, such as liquid manure or a fertiliser to preserve the rich green colour of the foliage. Weak soot-water applied to the roots frequently will do much to promote good colour. Now is a suitable time to cleanse all Palms by sponging them with soapy water or an insecticide.

Bouvardias.—These plants may be had in flower at almost any time. If early flowers are required more heat should be afforded. A low-roofed house in which the plants are kept near the roof-glass and fully exposed to light will suit them providing there is a moderately moist atmosphere.

Begonia Gloire de Sceaux.—This fine plant delights in plenty of heat and moisture during the time it is making its growth. For the present, all flowers should be removed so that strong plants may be produced before they are allowed to bloom in the early spring. The receptacles in which they are growing should now be well-filled with roots, and the latter will need some assistance in the form of liquid manure. Any check caused now by semi-starvation will become evident when the plants come into bloom. Once growth is completed a little less heat and moisture will suffice. As fog is a great enemy, the ventilators should be kept closed so long as it continues. Attend to the necessary staking as the growths develop. Begonia nitida will require much the same treatment as recommended for B. Gloire de Sceaux.

Souvenir de la Malmaison Carnations.—Young plants of these Carnations, raised from layers during July and August of the present year, and growing in sixty-sized pots, may be transferred to pots six inches in diameter, in which they may be allowed to flower. The compost for this final potting should consist of good, open loam, but should the loam be of a heavy nature, a little spent Mushroom-bed manure may be added, after passing it through a fine sieve; also add wood-ash, old mortar-rubble and coarse sand. Pot with medium firmness and when the work is finished stand the plants in a cool, airy house, using only sufficient fire-heat to expel damp. Water the plants sparingly during the dull winter months.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Cordon Pears.—The finest and best Pears are usually produced by trees trained against walls or wooden fences, provided the roots are in a good soil and the trees well looked after. The drainage should be ample, especially where the land is heavy. In many gardens, large and small, there are vacant spaces on walls or fences which might be utilised for Pears and choice Apples with excellent results. There is no other way in which such space can be so quickly and profitably covered as by planting suitable double or single cordons worked on a surface-rooting stock. In this way many varieties may be grown in a limited space. If single stemmed plants are chosen these should be planted eighteen inches apart; if double-stemmed, allow a distance of three feet between them. Do not plant trees too near the wall or fence, but allow sufficient space for the future development of the stems. Overcrowding is often a cause of failure, especially if the trees are allowed to lengthen their spurs year after year, as they cannot develop strong flowers, leaves or fruit buds when the spurs are thickly placed.

Pruning.—Large cordon trees that are in a full bearing condition should be pruned. Remove all old snags and thin out some of the spurs. When pruning Pear trees extra care is needed for varieties whose fruit buds are produced on shoots several inches in length. All shoots required to form fruit buds should be cut back to within a few buds of the base. Those required for extension may be left from twelve inches to fourteen inches in length, cutting them just above a suitably placed bud.

Top-dressing.—All fruit trees that are worked on a surface-rooting stock should receive every encouragement to keep them in perfect health. Feed the roots liberally during the summer with liquid manure, and apply heavy mulchings of decayed manure in dry weather. At the present season good top-dressings of fertile soil, with the addition of bone-meal, will greatly benefit the trees and help to increase the quality of the future crop.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Strawberries.—Growth having ceased, the plants will not derive further benefit from exposure to heavy rains. The main stock will remain plunged up to the rims of the pots, but plants intended for starting within the next few weeks should receive the shelter of a cold pit, from which the lights may be removed on fine days. Where a regular supply of forced fruit is imperative, a proper Strawberry house should be provided. Assuming that the Strawberry house is ready, the shelves may at once be filled with suitable varieties. The temperature through the first stage need not exceed 40° to 45° by night and 50° through the day. Kindly weather will very often favour the maintenance of these temperatures for some time, but, as free ventilation is necessary, the hot-water pipes may be warmed during severe weather. It is a good plan to have the pipes warm in the early morning and then water the plants and, if necessary, syringe the foliage; but much as the

Strawberry enjoys root moisture, tepid water must be carefully and judiciously used through the early stages of forcing.

Cherries.—If the earliest trees have not been housed no time should be lost in getting them cleansed and placed in position for forcing. Like Strawberries, they are most impatient of fire-heat and close confinement, no matter how light or suitable the house may be. The same degree of heat and the free circulation of air that suits the Strawberry will also suit the Cherry, and not a few growers provide good shelves where they will not impede the light, and force Strawberries together with Cherries. When pot Cherries are introduced the soil should be rammed firmly about the roots when fairly dry, watered with lime-water to expel worms, and top-dressed with loam enriched with bone-meal. If the weather is moist and mild all the ventilators may be left open by night and day, and later, when the buds show signs of swelling, a good substitute for fire-heat is the introduction of a body of fermenting material thrown loosely amongst the pots, where it may be turned and renovated as necessary; the warm vapour from this will be found more genial than moisture from the syringe.

Plums.—These, like Cherries, must be kept cool and the house well ventilated if they are under cover. Where proper attention was given to pinching during the period of growth there will be little pruning necessary beyond trimming rough cuts. See that the trees are cleansed as a safeguard against insect enemies, and top-dress the soil with loam, lime-rubble and bone-meal after removing the surface soil.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Dry Wall Gardening. — It is generally conceded that it is not necessary to have a rock garden to successfully cultivate effective alpine plants, as many of them will do quite well on the level ground, especially as edgings, where stones are used to hold up the soil in the front of a border. Many alpines of a prostrate habit, however, dislike excess of moisture, especially during the winter months, and for such subjects dry walls afford an ideal means of cultivation; indeed, very many plants are much happier under such conditions than in the average rock garden. Thus, on steep, sloping ground, where it is necessary or desirable to build retaining walls, there may be a dry wall that affords a ready means and ideal conditions for the successful cultivation of many choice and beautiful plants. Such walls are most pleasing when built of stone, but low walls may be of brick, with openings for plants, while along the top there may be fairly strong-growing plants of drooping habit; they soon present a pleasing appearance. Of course, such structures are not strictly dry walls; a dry wall is one built without mortar. In constructing a dry wall it is important to start with a firm foundation, and this is especially important if the wall is of considerable height. The stones should be slightly tilted towards the back, firmly bedded, and packed with soil as the work proceeds; a distinct advantage follows if the plants are inserted as the work of construction advances. Small, choice subjects should not be placed where they may be over-grown by stronger growers. Many natives of warm, dry countries are perfectly hardy and flourish on dry walls, whereas on the average rock garden they suffer from winter damp. Plants of a spreading or drooping habit are best for furnishing such walls, while those of a rosette or tufted habit find a congenial home therein, including the Saxifragas. Others that may be mentioned are Acantholimon, Achillea, Alyssum, Aethionema, Androsace, Arabis, Aubrietia, Campanula, Coronilla, Dianthus, Dryas, Erodium, Helianthemum, Iberis, Lithospermum, Onosma, Phlox, Saponaria, Sedum, Sempervivum, Thymus, and Veronica. Where a plant does not succeed in the rock garden, it is a good plan to test it on a dry wall.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Primulas.—The many beautiful varieties of the Chinese Primula are now making the greenhouse gay, and should be arranged in batches of one colour to be thoroughly effective. The Stellata forms are very useful plants for many purposes, and quite useful and neat specimens may be grown and flowered in four-inch pots, if given an occasional dressing of soil and manure, or regular supplies of liquid manure. Larger specimens may be grown if they are repotted into six-inch pots, and these, if the flowers are once more picked off, will provide a succession of flowering plants early in the New Year.

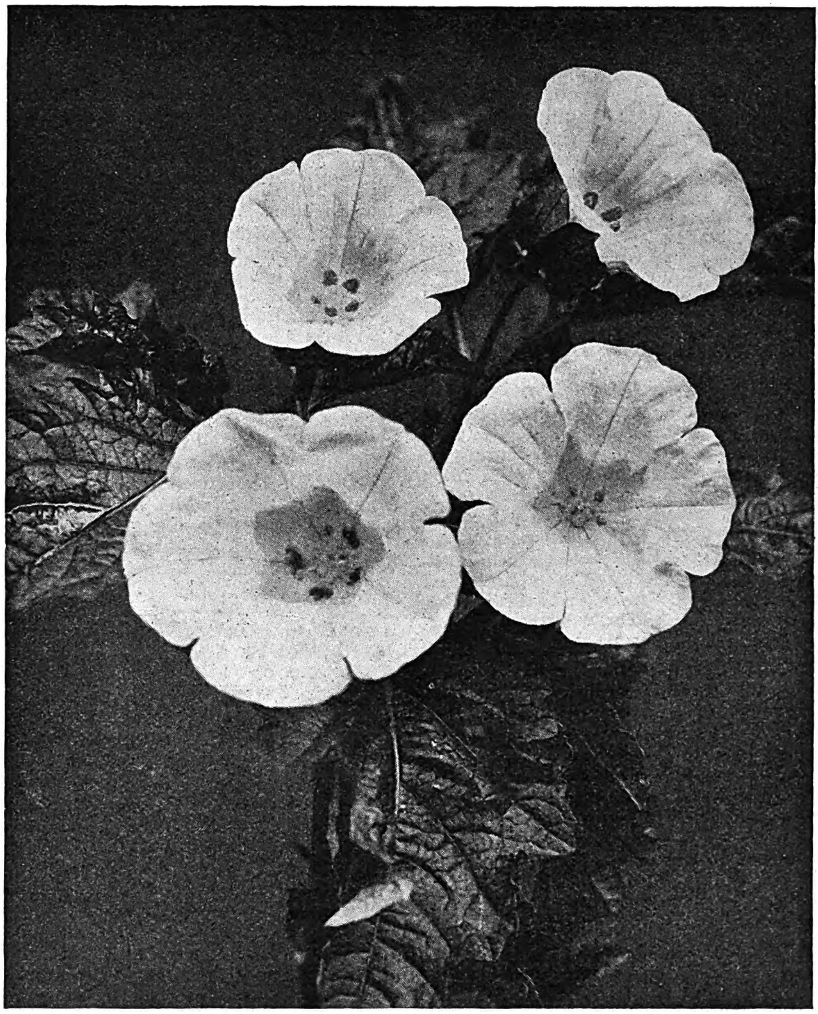

FIG. 199.—NICANDRA PHYSALOIDES.
(see p. 443).

The improved forms of P. malacoides are also well worth a trial, as their colours are more decided than in the type, and their stems stouter, and more able to hold the flowers erect. Among these, Advance, Achievement, Eclipse and Courtland's Seedling are recommended as being improved forms of this old favourite. P. malacoides, by the way, is much hardier than many believe, and the old plants may, after flowering, be planted out, where they will soon become established and produce another crop of flowers. P. obconica is one of the most free and continuous flowering plants in cultivation, but it has a bad reputation in many gardens as the cause of a very painful skin trouble, and should therefore only be grown where it is not likely to be a nuisance.

Planting.—Owing to the somewhat sharp frosts experienced last month, many trees, etc., were not forwarded by the nurserymen, and the delay thus caused must be made good so soon as possible. It is quite safe to plant Roses and fruit trees in December, when the weather remains mild and open, although all are agreed that earlier planting is to be preferred, as this allows the recently moved plants to become partially established before winter sets in. The main conditions to be observed, however, are that the soil is in good working order, neither frozen nor lumpy, nor wet and sticky after rain, and that planting is completed at an early date.

Celery.—The final earthing-up of this crop should now be completed and preparations made to give additional protection should hard frost set in, by placing bushy Spruce branches along the rows. These are readily put into position over Celery and as speedily removed when not required, and are capable of warding off the effects of quite sharp frosts. When a lengthy spell of severe weather is expected, a sufficient number of Celery heads may be lifted and stored in the vegetable shed, where they will remain fresh for a considerable time if the roots are left intact and not allowed to become dry.

Pruning and Nailing.—So soon as the foliage has fallen from fruit trees on walls the necessary pruning and nailing or tying may be attended to. In most gardens, nowadays, the walls are wired, and this greatly facilitates the work, but great care must be observed each season to see that the ties of the previous years are not cutting into the bark. Young, vigorous trees expand their main branches rapidly, and ties must be fairly tight to keep them in their proper positions; such ties must be removed when they become a source of danger. Where nails and shreds are still the main agency in securing wall fruit trees, this danger is not so apparent, but old shreds should also be removed and destroyed, as they form hiding places for the eggs of many insects.

ORCHIDS OF THE MEDITERRANEAN REGION.

Plant-lovers who sojourn on the Riviera during the winter and early spring months are usually interested in the terrestrial Orchids which are indigenous to the countries bordering the Mediterranean Sea. The genera represented include Ophrys, Orchis, Cephalanthera, Barlia, Serapias, Anacamptis and Aceras.

A study of these interesting plants usually ends in the student desiring to grow them in his own garden, and a few plants are brought home. Their culture, however, presents certain difficulties, for these Orchids do not adapt themselves readily to the cold and damp conditions of our more northern climate. Such interesting species as Ophrys Bertolonii, O. Speculum, O. Arachnites, O. Scolopax, O. tenthredinifera, O. lutea, O. aranifera, O. bombyliflora, O. atrata and O. fusca, Barlia longibracteata, Serapias cordigera, S. longipetala and S. Lingua, Orchis olbiensis, O. papilionacea and O. pallens are all worthy of cultivation, and the flowering of any of them affords ample reward for the care necessary for their well-being.

It is practically useless to attempt outdoor cultivation, but the plants may be grown in a cold frame. If, however, they may be accommodated in a Carnation house, the drier and more buoyant atmosphere will suit them better.

The application of water is the most difficult problem in the cultivation of Ophrys and Orchis, and especially so in the case of the former, for the young growths are tubular, and as the leaves develop they spread out near the surface of the soil until the whole plant forms a natural funnel. It is, therefore, most difficult to water the plants without some of the water finding its way to the centre of the growth, when it is immediately conducted down to the tuber, where, owing to slow evaporation, rotting commences, and in a short time it is possible to pull out the whole growth as its base has completely rotted away. The life of the plant thus depends on whether the new tuber of the current season's growth has already been formed. To avoid this trouble it usually occurs to the grower to partially immerse the pots as a means of supplying water, but again a difficulty arises, for the soil becomes saturated and dries so slowly (during the winter months) that the fleshy roots will probably perish, or their points become blackened and further growth stopped.

I find that the safest way to apply water is to plunge the pots in which the plants are growing into other pots sufficiently large to allow a circle about half-an-inch wide to remain between the rims of the two pots. The outer pot should be as well-drained as the inner one, with a layer of Sphagnum-moss over the drainage on which to stand the pot containing the tubers; the space between the two pots should be packed with Sphagnum-moss, and if this is kept constantly moist the plants will obtain sufficient moisture without direct watering at any stage of their growth.

The rooting medium for Ophrys and Orchis should consist of good calcareous loam. Species of Serapias are not usually found on a limestone formation, and if possible these should be given a lime-free soil, with the addition of some small granite chippings or sharp sand.

The tubers should be potted before growth commences, in pots of moderate dimensions; a four-and-a-half-inch pot will accommodate about four tubers of most of the species, but in the case of such strong growers as Barlia longibracteata one tuber will be sufficient. The pots should be well-drained, and if a thin layer of Sphagnum-moss is placed over the drainage it will act as a conductor, if the system of watering recommended is adopted.

Although these species are often termed European Orchids, many of them occur south of the Mediterranean, but the North African forms grow taller and are larger in all their parts than those found in the south of France and Italy; moreover, their vigour is increased in proportion to their size, and this they retain under cultivation. I recommend anyone who is interested in the cultivation of these plants to secure, if possible, these robust Algerian forms rather than those of southern Europe. It would, however, be a great pity if these plants were collected so freely that they eventually became as rare as some of our British species, and unless a really serious attempt is to be made to cultivate them successfully it is far better to let them grow in the more congenial surroundings of their native home. *F. C. Puddle, Bodnant Gardens, Taly-Cafn, North Wales.*

ORCHID NOTES AND GLEANINGS.

SARCOCHILUS FITZGERALDII.

This is one of the most attractive of Australian Orchids, and it was dedicated by Baron Ferdinand von Müller, Director of the Melbourne Botanic Garden, to Mr. Robert Fitzgerald, of Sydney, the monographer of *Australian Orchids.*

The stems are short, usually with three to five linear-oblong, leathery leaves, each three to five inches long; the slender peduncles are drooping, rather longer than the leaves, six- to nine-flowered. The flowers are about an inch in diameter, on white pedicels; the ovary is white, the sepals and petals white, with dense basal spottings of rose-purple. The lip is the shortest segment, saccate, three-lobed, the side lobes erect, white, spotted with purple, the small front lobe being bright yellow; the column is very short.

In *Australian Orchids*, Fitzgerald wrote: "Within the spray of the Naroo falls and the surrounding streams, Sarcochilus Fitzgeraldi was found in masses clinging to the dripping rocks, and covering the black basalt with its green roots that stretched for yards over the smooth surface, and followed the mossy crevices. With it were associated a strangely proliferous form of Dendrobium Kingianum and clumps of Sturmia reflexa, while to the small branches of bush and tree clung the little Oberonia palmicola, Dendrobium aurantiacum, and Sarcochilus olivaceus, and upon the fallen trees grew wonderful old plants of Dendrobium Hillii. The rich vegetation, black basalt, and white, foaming river, with glimpses through the tops of the trees of the ever-falling water, made one of those rare spots in which the world is forgotten and the longings of the naturalist realised."

Later, Fitzgerald wrote of this Orchid: "It is dependent on insects for its fertilisation. At the Naroo falls many of the leaves were found to be eaten, probably by a species of wood-louse or sand-hopper (Amphipoda), which was numerous beneath the clumps; and these insects are, I believe, the principal agents in conveying the little globular pollen masses into the stigmatic chamber."

The genus Sarcochilus resembles Dendrobium in some respects, but differs from it in the form of the pollen masses and their attachment to a caudicle; the seed capsule and seed are also widely different from those of Dendrobium. The interesting and pretty S. Fitzgeraldii requires an intermediate temperature, rather subdued light, a moist atmosphere and plenty of moisture at the roots at all times. It may be grown in pans in Sphagnum-moss, or with only a small proportion of fibre. *R. E.*

BULB GARDEN.

EREMURI.

These noble plants thrive in a deep, loamy, well-drained soil, and succeed best when planted on a mound or raised bed; they enjoy a position protected from the morning sun and sheltered from high winds.

The wheel-shaped roots may be planted during October or November, and should be protected during winter by means of dry, light material, such as Bracken or Heather.

Eremurus himalaicus, a white-flowered species, was introduced in 1881; the peach-coloured E. robustus came from Turkestan in 1874, and from the same district came E. Olgae in 1881. Of more recent introduction is the rather dwarf E. Bungei, yellow, with orange anthers. A rare species is E. Korolkowii, from Central Asia, with a bright rose inflorescence. E. himrob is a beautiful hybrid. Other desirable Eremuri are E. robustus, E. Elwesianus, light pink; and E. Warei, buff-yellow, shot with pink.

Frequent disturbance of Eremuri is undesirable. Established plants respond readily to an occasional surface-dressing of rich soil. Propagation is effected by seeds. The garden value of the genus is considerable, and by the use of various species many noble spring and summer effects may be obtained. *Ralph E. Arnold.*

ROSE GARDEN.

ROSE MRS. JOHN LAING.

During the last few years I have been repeatedly impressed by the beauty and perfection of this old Rose. It is free-flowering, sweetly-scented, and most of its blooms are of exquisite form. These good points, however, are not so constant on young bushes as on old plants. If this Rose is allowed to develop into a large bush—say, upwards of five-and-a-half feet high, and three feet across—the wealth of beautiful flowers such a specimen will produce is astonishing.

In our kitchen garden there are two or three such bushes. I do not know how old they are, but certainly more than ten years. Very little pruning is done beyond the removal of the dead parts and a tipping of a growth that appears to be excessively strong. Nor has manurial aid of any description been given for several years. Such continuously excellent results for so little expenditure would, I know, make envious some rosarians who have to feed their plants regularly to keep them growing well. I conclude that the strong, moist clay which the roots of our plants have reached is able to supply the needs of the Roses. *C. T., Ampthill.*

HARDY FLOWER BORDER.

ERIGERON COULTERII.

Erigerons for the garden are now numerous, and most of them are very attractive, either by reason of their habit, flowering beauty or other points. Some of the newer ones, reputedly of hybrid origin, are most beautiful, but few possess quite the colouring of E. Coulterii. It comes from moist meadows in California, which indicates that it should not be planted in a very dry position, although it does not follow that it requires a really damp place in our gardens, where the summer climate is so different from that of California. A good loamy soil in the flower border suits it well, but those who can manage plants a foot high, or a little more, in their rock gardens should grow E. Coulterii near the base. Its nominal height is about a foot, and it has good foliage and sends up leafy stems, each bearing a solitary white flower, or one of white, touched with blush.

E. Coulterii may be increased by division in the spring or autumn, or seeds may be sown in spring. It is hardy. *S. A.*

DIERAMA PULCHERRIMA.

This South African Irid is an uncommon yet particularly refined and attractive plant, its graceful, slender, flower-stems, bearing beautiful, bell-like flowers, frequently reaching a height of five or six feet under good cultivation. Dierama pulcherrima succeeds best in a rich, well-worked soil where its roots can ramify freely, and it should be planted in an open, sunny position. When given these conditions it grows with remarkable vigour and freedom.

The genus includes several species, but D. pulcherrima is the most useful for garden decorative purposes, and the colour range has been widened in recent years by the introduction of several varieties of considerable merit. Heron is an attractive variety with tall, wavy stems carrying rich, wine-red flowers of striking beauty; Windhover is a robust and free-flowering variety with deep, lilac-rose flowers; Kingfisher is a large-flowered variety with blooms of a beautiful shade of pink; and Heatherbell is a very charming variety with flowers of a delicate shade of pink, flushed with deep rose. *A. P. C.*

FLOWER GARDEN.

NICANDRA PHYSALOIDES.

The Apple of Peru is an old-fashioned plant now rarely seen, except in old-fashioned gardens, in botanic gardens, or where collections of so-called medicinal plants are grown as a matter of interest. Nicandra physaloides is a strongly-growing annual, easily raised from seeds sown under glass early in the year, as in the case of many other tender annuals. When planted in fairly rich soil it may grow three feet or four feet tall, and as its habit is somewhat spreading and the toothed leaves are abundantly produced, a well-developed specimen assumes considerable proportions.

The blue flowers, an inch or more in diameter, are very attractive and freely produced (Fig. 199, p. 441) and followed by an inflated, five-winged calyx containing a berry-like fruit. The inflated calyx and fruit closely resemble those of a Physalis, hence the specific name.

In some parts of the tropics N. physaloides is widely distributed, and in certain parts of the United States of America it has escaped from cultivation and become naturalised over a large area.

Other names for this interesting old plant are Atropha physaloides and Physalodes peruviana. The species is figured in the *Botanical Magazine* of 1824 (t. 2,458), and the illustration is accompanied by the statement that "The name of Nicandra was first given to this genus by Adamson, and adopted by Jussieu, Persoon, and others. Schreber applied the same name to the Potalia of Aublet which may occasion some confusion; but it will be better to retain Aublet's original name for his plant than to adopt a new name for this, as Ruez and Pavon have done. It ought, undoubtedly, to be separated from Atropa. Native of Peru and Chili; grows very well in the open border; but is best raised in a hot-bed and treated like other tenderer annuals; it may, however, be sown in the spring in the open ground, but will not flower so early."

TREES AND SHRUBS.

PINUS RADIATA.

The Monterey Pine, a valuable and handsome tree for planting in maritime districts, is easily distinguished from other three-leaved Pines by its slender, soft, flexible, bright green leaves, which are densely crowded on the branches, and by its cones, which are borne on very short, stout stalks, obliquely conical, from four to seven inches long, and of a bright brown colour. The cones are usually borne in clusters of three to five, but are sometimes solitary; they remain closed on the branches for many years, forming an interesting feature on old trees.

Pinus radiata grows rapidly when in a young state; in districts where it thrives it will make two-and-a-half to three feet of growth in a season. It is of little use as a forest tree, as the timber is soft and brittle. As a tree for ornamental planting it has much to recommend it, being symmetrical while young and of a pleasing green, unless growing in inland districts, where it is inclined to turn brown during winter. The species thrives well on the Norfolk coast; planted in exposed positions during 1904-5, in a sandy loam, the trees are now much superior specimens to those of other Pines planted at the same time.

To appreciate the value of the Monterey Pine for ornamental planting it must be seen as large specimens, such as those growing in the grounds of Castle Kennedy, the seat of the Earl of Stair. The sandy loam and well-drained situation combined with the mild climate and humid atmosphere seems to have been found congenial to them. The illustration (Fig. 198, p. 439) shows a very old tree at Pain's Hill, Cobham, Surrey. This is a picturesque old specimen standing in an isolated position in the Park. The gnarled branches and thick, dark-brown, deeply-ridged bark are most effective. Planting in permanent positions when the trees are small is necessary, and even then it is advisable to obtain the plants in pots, as they do not transplant well from open nursery lines. *R. F., Wisley Gardens.*

CRATAEGUS CARRIEREI.

The bulk of the foliage of this fine Thorn persisted until the third week in November, and a few sprays of the best-coloured berries have been cut. These sprays of deep green, leathery foliage and Pear-shaped fruits of yellow and scarlet make a striking decoration for any room. It is undesirable, however, to cut this Thorn severely because it is rather slow-growing, and its handsome, rounded form would be affected. A specimen tree here is about fifteen feet in height, shapely, and decidedly attractive both in flower and in fruit—in fact, the glossy leaves always arrest attention. These are whitish on the underside, obtuse, and so much as four inches long and two inches broad on the best growths.

Crataegas Carrierei is said to be of garden origin, its presumed parentage being C. mexicana and C. tomentosa. As a well-balanced tree for lawn or open woodland Carriere's Thorn is worthy of recommendation. Being among the last—if not the last—to cast its leaves, and retaining its berries, often into the New Year, it is an altogether useful subject. *C. T., Ampthill.*

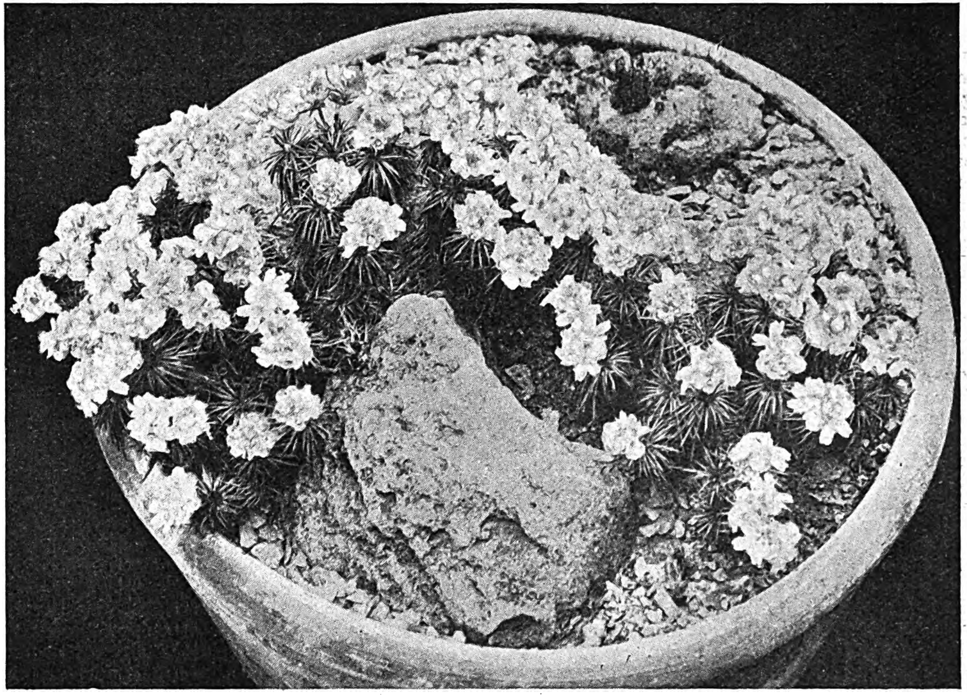

FIG. 200.—ARMERIA CAESPITOSA.

ALPINE GARDEN.

ARMERIA CAESPITOSA.

Armeria caespitosa is the brightest gem of the Thrift family and occupies a position in the front rank of alpine plants, but may be grown with comparative ease. It is a native of the mountains of central Spain, where it is to be found at an altitude of from 5,000 to 8,000 feet. In our rock gardens it should be given a small, deep crevice, filled with light, loamy soil, or a sunny position on the moraine. It is also a delightful subject as a pot plant in the alpine house (Fig. 200).

A. caespitosa is a dwarf perennial of densely tufted habit, forming close cushions of rosettes of small, deep-green, needle-like leaves. Early in June the leaves are practically hidden from view by the large, almost sessile, heads of pale pink flowers. *F. A. G.*

ANTIRRHINUM ASARINA.

Antirrhinum Asarina dies off on ordinary rock work and many people jump to the conclusion that it is not hardy, or else only an annual or biennial. It is, however, a true perennial, but must be grown in a dry crevice between the rocks or in the chinks of a sunny wall. In such places it will live for many years, even in positions where it appears marvellous how plant life could sustain existence. The foliage is wonderfully big for the plant, soft, fleshy, and covered with grey hairs, and formed like that of the Ivy. The fleshy stems are fragile-looking and the flowers which are of a pale yellow, have the lips touched with red. They are produced in the axils of the leaves.

A. Asarina is very easily raised from seeds, which may be procured from several seedsmen in this country. These may be sown under glass and the seedlings put into their flowering positions so soon as they can be readily handled, or they may be sown in the crevices where the seedlings are to remain. Although not a showy rock plant, A. Asarina is valuable for such places as have been indicated. By the way, I see it is stated that the correct name of this plant, according to the rules of priority, should be Asarrhina Loebelii, but few will be willing to accept this change of title.

IBERIS PINNATA.

Under the name of Iberis pinnata I received about twenty years ago, a perennial Candytuft, which proved very useful on bold rockwork, being of prostrate habit, with dark green leaves and heads of white flowers. What made it of special value was the fact that, in addition to the mass of flowers it produced in spring, it came into bloom again in autumn and flowered until severe frosts destroyed the flowers. Although received as I. pinnata, I could never see any reason for this name, as there was no sign of pinnate foliage, and I now find it stated authoritatively that I. pinnata is a plant of annual or biennial habit with the leaves feathered into lobes. At the same time, the I. pinnata I have grown is a good plant, although probably only a form of I. sempervirens.

SAXIFRAGA COTYLEDON ISLANDICA.

While there are numerous varieties of the noble Saxifraga Cotyledon, there is none finer than the one called in gardens S. Cotyledon islandica or simply S. islandica. It first emanated in this country from the famous garden of St. John's, College, Oxford, and was not long in becoming a favourite among growers of the larger silver Saxifrages, whose handsome rosettes and magnificent plumes of flowers are so striking in the rock or wall garden. It is no disparagement to the magnificent S. Cotyledon caterhamensis to say that C. islandica outrivals it in the size of its glorious rosettes and in the grandeur of its noble plumes of flowers. Where it does well it forms large rosettes of narrow leaves, sometimes more than a foot across, and throws up immense plumes, so much as four or five feet high, laden and arching over with their abundant, snowy flowers.

Unfortunately, the plant is not a success everywhere, as it does not thrive in a few certain gardens, from some obscure reason. It is not such a determined lime-hater as most of the other forms of S. Cotyledon, and has thriven well in gardens where lime was present in the soil. It must, however, have a light compost, with plenty of air and sun. It produces offsets freely enough—a great point in its favour in the case of a plant whose flowering rosette dies after blooming. If grown at all near other Saxifrages of the same section seeds are not likely to produce plants quite true to the parent.

ERYSIMUM PUMILUM.

ERYSIMUMS, or Hedge Mustards, comprise a few species of considerable value in the rock garden, and several of them are fairly well-known. E. pumilum, one of the best and neatest, is not among the few which are much cultivated, but it deserves a better fate than exclusion from the garden.

A very high authority has told us that it "is one of the most beautiful of all." It comes from dry, sunny slopes of the Alps (though not found in the Swiss Alps) where it is remarkably neat and pretty. It is much dwarfer than E. pulchellum, and only grows about three inches high, forming small tufts of neat, narrow leaves, and throwing up short stems, each carrying a wonderfully large head of pale yellow flowers. So large, indeed, is the head of bright yellow flowers that it practically covers and hides the foliage from view. In the rock-garden, in rich soil, it may exceed its proper dwarf stature, and where this is the case the soil ought to be made poorer and harder, or the plant may be transferred to the moraine, where it will retain the diminutive stature which is one of its charms to the alpinist. It is almost needless to say that it ought to have a sunny place. E. pumilum may be propagated by cuttings or raised from seeds, which I observe are offered by seedsmen. *S. Arnott.*

NOTES FROM GLASNEVIN.

THE stormy weather experienced at the end of October and beginning of November was followed by several frosts, the last being so severe as 10°. Since then, mild weather has supervened and plant life shows a very remarkable meeting of the seasons. Certain Roses such as Christine, Koster's Orleans and Ellen Poulsen, grown in beds of one kind for decorative purposes, are as bright and full of flower as beds of Begonias or Zonal Pelargoniums in the height of summer. On the other hand, Iris unguicularis alba has been in flower for three weeks, and the ordinary mauve form opened on November 14. Narcissus Tazetta, a very old clump which has been kept under observation for many years, has already a few flowers open, the previous earliest record being Christmas week. Snowdrop November, a gift from Sir William Lawrence, opened during the first week of the month; it is a beautiful Snowdrop and a decided acquisition among winter-flowering plants.

The dull wet summer had no ill-effect on the flowering of certain bulbs usually supposed to require considerable ripening. Nerine Bowdeni and the form known as Colossus were never finer, and apparently require no other treatment than to be planted out in well-drained soil and left alone. Some of the clumps have been in position a dozen years and increase in beauty each season. Saxifragas of the apiculata group are very forward, some flowers being open now, while Campanulas of the Portenschlagiana type still show quite a fair number of flowers. Two striking groups are of Schizostylis coccinea and its pink variety Mrs. Hegarty. Though one would expect them to demand sunshine, as they come from South Africa, there is no evidence in their present wealth of flowers to show that they resent our dull, grey skies. Spencera ramalana flowers most persistently, continuing to throw up spikes of yellow flowers until stopped by continuous frost.

Trees and shrubs are now more remarkable for their fruits, as in Cotoneasters and Barberries, or brightly coloured shoots, as in Dogwood and Willow, than for flowers, but already a few flowers are open on a young plant of Prunus subhirtella ascendens, while Escallonia floribunda, on a wall, is bearing many handsome panicles of white flowers, and a fair display is still made by Bursaria spinosa. The many forms and hybrids of the Strawberry Tree, Arbutus Unedo, have never flowered more freely and are among our most valuable evergreens. The old Laurustinus (Viburnum Tinus) is a valuable winter-flowering shrub, which, if newly-introduced, would create something of a furore. The more recently introduced V. grandiflorum is now showing its clusters of pink flowers, and those of V. fragrans are becoming increasingly prominent every day.

INDOOR PLANTS.

Lobelia coronopifolia (*Bot. Mag.* t. 644), of which seeds were received from South Africa, was known in gardens a hundred years ago, when South African plants were being introduced, and figured in the illustrated botanical and horticultural magazines of that time. From one to three flowers are produced on a common stalk, six to eight inches in length, and they are pale blue. The deeply-cut leaves are mostly basal, the stem procumbent. Although less floriferous than the many bedding forms of L. Erinus and not likely to equal L. tenuior, as a pot plant, L. coronopifolia is interesting in a botanical collection.

Isoloma amabile, also known as Tydaea amabilis, is a singularly attractive greenhouse plant. According to the *Botanical Magazine* (t. 4,999), it was discovered in the cold regions of the Cordilleras at 8,000 to 9,000 feet, in 1855. The figure quoted fails to convey an accurate impression of the colour effect of the whole plant, due to the soft red hairs with which all the parts are furnished, particularly the stem, veins on the lower sides of the leaves, pedicels, calyx and corolla. The flowers are produced on pedicels, several together, from the axils of the opposite, ovate, pointed leaves. The corolla is long, widening towards the mouth, where the lobes are spreading and somewhat reflexed, rose-red in colour, the throat yellow, with red spots. Isoloma amabile requires warm greenhouse cultivation during the growing season, and will flower admirably where the temperature may fall to 50°, but it should be allowed to rest in a cool house from which frost is excluded.

Pelargonium Fothergillii is a species or hybrid resembling P. zonale. It is figured in Sweet's *Geraniaceae*, Vol. III, t. 226, under Ciconium, and is flowering now in the Glasnevin collection where the comparatively large umbel of flowers renders it conspicuous among other species. The lobed, crenate leaves are softly-hairy on both surfaces and show a dark zone. The flowers are numerous and closely arranged in the umbel, salmon-red rather than orange-scarlet, as described by Sweet, *loc. cit.* The habit and colour suggest that P. Fothergillii is probably as useful for outdoor ornamental planting in summer as any of the popular modern forms of P. zonale and its hybrids.

Podalyria sericea is a member of the Pea family and native of the Cape. A batch of young plants, though not flowering, is conspicuous among other greenhouse subjects by reason of the beautiful, silvery, silky appearance of the leaves. It is figured in the *Bot. Mag.*, t. 1923, and in the *Bot. Rep.* t. 440, as Sophora sericea. The charm of the plant would appear to lie chiefly in the simple, ovate, silky leaves, though the small pink flowers, produced from the leaf axils, are not without attraction. *J. W. Besant.*

DEVELOPMENTS AT WISLEY.

WHEN making a tour of Wisley at the present time a visitor will observe that many practical developments are taking place. One of the most interesting of these is the opening up of the Pinetum by means of a broad grass path from the seven-acre field which contains the collections of trees and shrubs. A vista is being opened up from this point to the Pine woods in the distance, giving an idea of greater expanse than previously existed. In making this part more accessible to visitors, the need for further developing the Pinetum will probably appeal to the authorities, and it is obvious from the appearance of many of the Cedars, Cypresses and Pines already planted that there would be no difficulty in establishing a collection of Conifers which would add an extremely interesting feature to the many Wisley already possesses.

Another interesting alteration in course of progress is one which will give more direct access to the rock garden from the broad, paved path which runs alongside the glasshouses. By clearing a corner of the wild garden beyond the eastern end of this path, a continuation of it is effected in a straight line until it meets the existing path on the lower side of the alpine field leading to the rock garden. I had previously passed this corner without noticing a particularly fine Oak, but with the undergrowth now cleared, this stands out as a superb specimen, showing twenty-five feet of clean trunk and a well-balanced head. When the remainder of the undergrowth is removed there will be a clear view from this point across the alpine field to the rockery beyond.

A good deal of remodelling and replanting is still being carried out in the rock garden for the purpose of giving a better rooting-medium to many of its occupants, and it is obvious from the healthy appearance of the plants in portions replanted last year that the work is being done on practical lines. New frames are also being built in the alpine department showing that there is a continuous increase in the interest taken in what is such a marked feature of present day gardening. *Onlooker.*

EWENNY PRIORY.

THE county of Glamorgan is a land of castles, many of which were erected by Norman lords. Beautiful gardens surround some of them and it was my pleasure to visit one on a recent occasion. This was at Ewenny Priory, the residence of C. G. Turbirville, Esq.

Ewenny Priory was completed in 1141. It has known stormy times, for it is said that Cromwell tethered his horses in the ancient church which adjoins the mansion. The outer wall of the kitchen garden, which covers about one acre, is part of the old sentry wall. It is now devoted to the more peaceful art of fruit culture. Cordon Pears, fan-trained Plum and Cherry trees are trained on the wall, and for the most part they look a picture of health. Pears are in great demand at Ewenny, although the trees have not been too fruitful this year, I saw some fine specimens of Doyenné du Comice, Beurré Capiaumont, Winter Nelis, Pitmaston Duchess and Durondeau.

The well-constructed fruit cage contained many good examples of small fruits, but the feature which interested me most was some well-fruited canes of the Raspberry named November

Abundance. The fruits were quite ripe and of good flavour.

Apples do very well at Ewenny, particularly the varieties Lord Derby, Warner's King, Worcester Pearmain, Lane's Prince Albert, King of the Pippins and Cox's Orange Pippin.

Indoor fruits are subjects of great care and I have rarely seen finer Peach trees than those which fill two large houses. Mr. Mitchell, the head gardener, is successful with all the leading varieties, save Duchess of Corwall, which he finds a shy setter. There are three large vineries, a conservatory and a range of plant houses, the latter well stocked with good plants. No Japanese Chrysanthemums are grown, but a large number of decorative and single varieties are grown for cutting. A batch of Begonia Gloire de Lorraine promises well, and Mr. Mitchell is hoping to have ripe Tomatos next March. His aim is to keep the plants sturdy and, if possible, to set fruit early in the New Year.

As might be expected, the ornamental gardens at Ewenny are very beautiful. Of summer bedding in the old sense there is very little. A wide expanse of turf sweeps across the front of the mansion and well-kept Yew hedges are everywhere. The Rose garden and flower garden lie on the east side of the Priory. All the best Roses and herbaceous subjects are tastefully arranged there. The stream which flows through this part of the estate is flanked by scarlet and white Hawthorns, planted alternately and in spring they provide a lovely picture.

Mr. Mitchell, who has completed twenty-nine years of service with the family, has every reason to be proud of his well-kept charge. Part of his apprenticeship was served in Veitch's nursery, and such well-known gardens as those at Shipley Hall and Tatton Park. *Geo. H. Copley, N. D. H.*

RAISING NEW VARIETIES OF HYDRANGEAS.

The raising of new Hydrangeas is engaging the interest of many cultivators, and each year new raisers come forward to make additions to the already large number of existing varieties.

The cultivation of the Hydrangea has become immensely popular, thanks to the eminently decorative qualities of this magnificent plant and to the placing in commerce of varieties with large flowers of vivid colouring, supported on rigid stems. It has become one of the most fashionable of flowering plants, and there are certain growers who specialise in its cultivation, and grow Hydrangeas by hundreds of thousands to supply the markets and florists throughout several months of the year. This popularity is due to the great improvements which have been effected and to the display of new varieties at horticultural exhibitions, where the public is able to judge of the great progress which has been made.

It was in 1908 that M. Lemoine, of Nancy, distributed the varieties Avalanche, Fraîcheur and La Lorraine; and M. Mouillère, of Vendome, gave us Vicomtesse de Vibraye and Madame E. Mouillère, in 1909.

The efforts of raisers during the last few years have chiefly been directed to the production of plants with brightly-coloured or pure white flowers, and also to the increase in size of the "blooms." In regard to the latter, "flowers" measuring 10 cm. and inflorescences of 40 cm. in diameter are to be seen at leading shows. All these improvements are the result of patient work, assiduous care and long and untiring observation.

New varieties of Hydrangeas are obtained exclusively by means of seeds, which may be produced either by self-fertilisation or by artificial fertilisation. Seedlings resulting from self-fertilisation usually differ very little from the seed-parent, so that growers prefer to obtain seeds by artificial fertilisation.

The choice of the seed-parent plays an important part in the production of a variety, and it goes without saying that this choice must not be made on theoretical grounds only: it must be dictated by the results it is desired to obtain, always bearing in mind the fact that the male, or pollen-bearing, parent, plays a preponderant part in the production of new varieties.

The inflorescence of a Hydrangea is composed of two kinds of flowers: (1) sterile flowers, and (2) fertile flowers. The sterile flowers (Fig. 201, No. 1) more or less large, are composed of well-developed petaloid organs, with an insignificant corolla and more or less numerous stamens, but lacking an ovary; they are not therefore capable of producing seeds. They are more or less coloured, or white, and form the ornamental portion of the inflorescence.

The fertile flowers (Fig. 201, No. 3) are, on the contrary, quite small, and are placed at the base of the pedicels of the sterile flowers (Fig. 201, No. 4). They are more or less numerous, according to the species or the variety in question. For example, in Hydrangea Mariesii, which has served as the parent of a number of varieties, they are numerous, and also in H. petiolaris, in which the inflorescence is almost totally composed of them. These hermaphrodite flowers thus contain the well-formed male and female organs, and are capable, therefore, of producing numerous seeds by self-fertilisation. Artificial fertilisation requires to be done with the greatest care, the first operation necessary being the suppression of the stamens, at the time when these organs are totally enclosed in the flower bud (Fig. 201, No. 2), and always before the pollen is in a dehiscent condition. This delicate operation requires great skill, and must be done with all necessary precautions by the aid of the small forceps usually employed for this work, special care being taken not to injure the ovary. At the end of three or four days after the removal of the stamens, the stigmas are generally sufficiently developed and ready to receive the pollen from the plants chosen to be the male parent, and taken, so far as possible, from the stamens of sterile flowers.

A short time after the pollen has been applied, with the aid of a small brush, to the stigma of the flower, the petals fall, the ovary begins to swell, and the fruits develop normally. The fruits assume different shapes, according to the variety; they are sometimes spherical or rounded, as in the variety Sensation (Fig. 201, No. 6), sometimes more or less long, as in the variety Triomphe (Fig. 201, No. 5).

Plants carrying the fertilised flowers should be placed in a well-ventilated house, and lightly shaded when the sun is hot. Under these conditions the fruits attain their complete development and ripen, usually in about four or five months. So soon as they are ripe—which may be easily recognised by the brown colour they assume—they are harvested and preserved in a dry atmosphere in paper bags on which the names of the parent plants have been inscribed.

The seeds are sown in the spring, under glass, in March or April. For this purpose very clean pots must be used, filled with well-drained *terre de bruyere* (a kind of peaty leaf-mould). The seeds, of which each fruit contains a goodly number, are very small and elongated, and should therefore be sown on the surface, without being covered by the soil—as in the case of Begonia seeds. The pots are then placed on the staging near the glass. If kept moderately damp and in a temperature varying between 15° and 20° centigrade, germination soon takes place, and small plants are formed rapidly, and may be pricked out into pots so soon as they can be handled easily. When the young seedlings are sufficiently developed they are potted separately in small pots, 7 cm. in diameter, and placed under a frame that is kept air-tight for several days. After this, it will be necessary to admit air freely and eventually to expose them to full air and sunshine whenever the weather permits. From this point, the young Hydrangeas may be treated exactly like cuttings; for instance, they may be repotted into pots measuring 10 cm., and then into larger ones of 15 cm. towards the middle of August. A month later, the plants have attained complete development, and the flower bud is already formed. They are at that stage single-flowered specimens if they have grown normally, or multi-flowered if the growths have been pinched in June. When there is danger of frost the plants should be placed under cover, either under frames, or better still, in a cold house, near the glass; this permits of their being brought into growth early, and they will then flower magnificently about May 15 to 20, *i.e.*, a little more than a year after the seeds were sown.

Cultivated in this way, Hydrangeas become practically annual plants, since eighty per cent. to ninety per cent produce their flowers the first year. The raiser therefore concentrates all his attention on these young plants, for if he has done the crossing cleverly he is repaid for all his trouble by the satisfaction of obtaining new varieties of real merit. But it is necessary to eliminate all but the very best plants, retaining only those that may be classed among "*plantes d'elite.*" *H. Cayeux, Director of Parks and Gardens, Le Havre.*

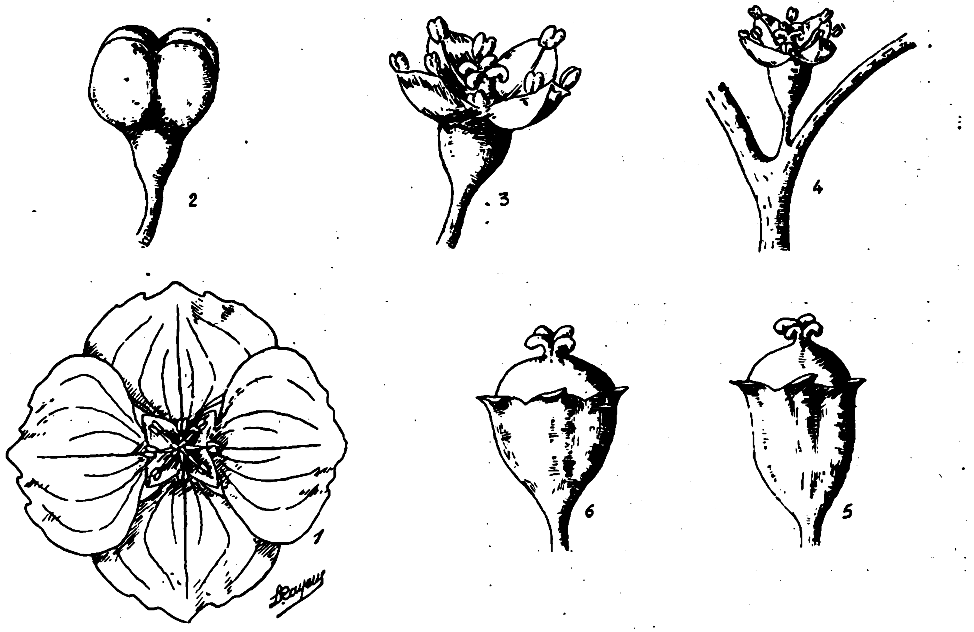

FIG. 201.—RAISING NEW HYDRANGEAS.

1, Sterile flower, reduced; 2, bud of fertile flower, × 2; 3, expanded fertile flower, × 2; 4, fertile flower growing at the base of the pedicels of sterile flowers, nat. size; 5, long-shaped fruit of Hydrangea Triomphe, × 2; 6, rounded fruit of Hydrangea Sensation, × 2.

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XX.—BACK TO WORK.

SEPTEMBER 3, then, saw us ascending the first range from the eastern edge of the plain once more, in pouring rain, as usual; and I registered a vow that I would march right through to Assam, and never travel this hateful jungle path again. While in Fort Hertz I had received the expected letter from the Government of India stating that, so far as they were concerned, I might follow the Lohit route at my own risk, but I must not look to them for help if I got into difficulties; and the difficulties were simply that there was no food or transport *en route*—which meant for three weeks. I knew that already, so all was well. Curiously enough, when my wife arrived in Rangoon, in December, and heard that I was missing, she wisely told the local Government that I was probably coming by the Assam route, and would turn up presently; the reply was, that I could not be coming by that route because it was quite impossible to get through! Curious things, Governments; they mean well. So far as the Tisang river all went well; then we had to change coolies, and a day was lost, after which we went on to the Nam Tamai without a halt. It was now September 11.

I went on collecting, and found a number of interesting things in the dense jungle, including a good Clerodendron and a creeping epiphytic Gesnerad with bright scarlet, tubular flowers and small, fleshy leaves. A Cypripedium was in bud on the bank, and there were a few other Orchids, such as a Dendrobium with salmon-pink flowers. It was rather too early yet for fruits to be strewn on the ground, indicating the forest trees met with, but I noticed a few of Castonopsis and certain Dipterocarpeae; and I picked up a solitary fruit of a Magnolia at about 6,000 feet, although I could not find the tree. In some places Bamboo seeds, nearly as big as Hazel Nuts, were scattered over the ground; the Nungs collected these and roasted them for their supper. Whenever we came to cultivation the coolies searched amongst the crops for Cucumbers, and helped themselves liberally; apparently such communism is customary amongst primitive man! The Cucumbers were most refreshing, anyhow.

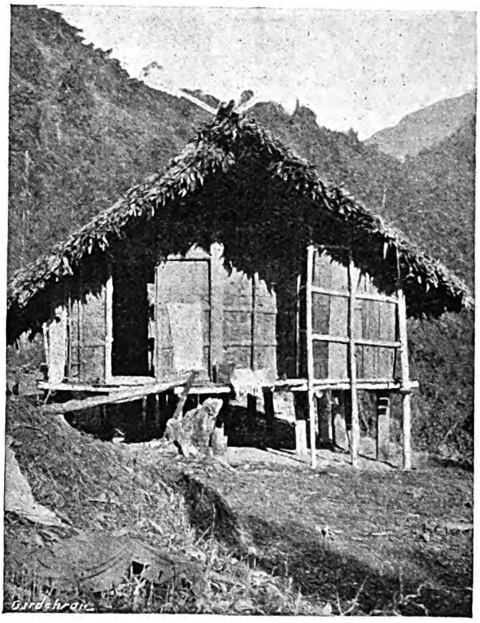
FIG. 202.—NATIVE HUT ON THE NAM TAMAI.

September 8 was very nearly my last day on this expedition. The weather was particularly hot, and I was waiting for tea at the end of the march, sitting in the shade of the hut, which stood on tall stilts, about five feet off the ground. The coolies were squatting outside with their loads, which had not yet been untied; the servants were lighting a fire. Suddenly, without any warning, I heard one ominous crack, followed by a tearing sound, and one of the coolies gave a shout of fear and astonishment. I needed no second encouragement to do something, so sprang to my feet. With a bound I was through the door and out on the verandah, now tilted at an alarming angle; the ladder—a notched log—was gone, and I leapt blindly. Once before, many years ago, on the Burma-China frontier, I had heard a similar sound, and I knew instinctively what it meant; one of the heavy timber beams supporting the immense weight of sodden thatch had broken, and after that, of course, the whole hut simply collapsed flat, like a house of cards. The moment I hit mother earth, that roof spread-eagled; everything happened with amazing swiftness. One minute I was sitting quietly reading on the springy Bamboo floor of the hut; before the end of the same minute I was picking myself up from the ground, contemplating a flattened mass of thatch and beams. An instant's delay, and I should have been crushed and smothered. Whether an earth tremor had shaken the thing down or whether it had just simply collapsed—houses do, sometimes, even in London—I cannot say. I once saw half a Maru village destroyed, on the China frontier; but that was due to a whirlwind.

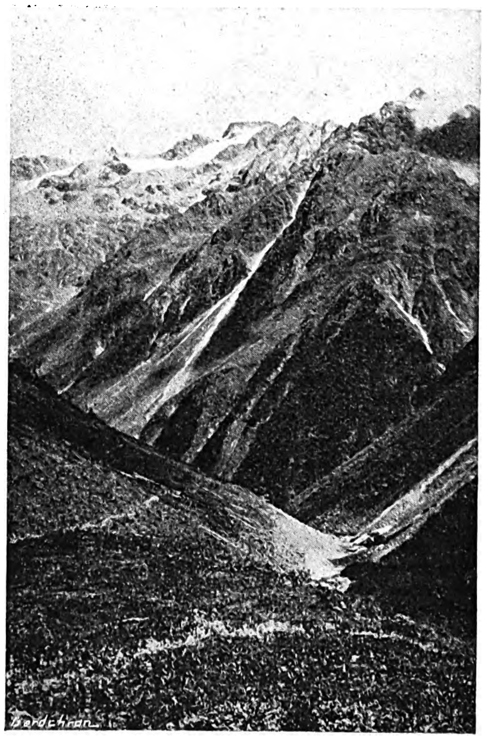
FIG. 203.—UPPER SEINGHKU VALLEY.
Alpine turf, 12,000 ft. alt.

There was luckily no further delay at the Nam Tamai, and we continued the march up the valley stage by stage, arriving at the Seinghku confluence once more, on September 17. I tried a double march one day, but all the girl porters pretended to be lame, and refused to go on, so I dismissed them, much to their chagrin, replacing them with youths.

Meanwhile, fresh species of Impatiens, Begonia and other genera were continually cropping up. Asystasia sp., with lurid purple flowers, was frequently seen on the edge of the jungle, and a straw-yellow Strobilanthes. Zingiberaceae were practically over, but Labiatae were beginning to appear as big coarse weeds; many species flower in the alpine meadows towards October, and the same species may be found in the open spaces far down into the forested region. Ficus Cunia furnished me with a little fresh fruit; the Figs are borne on long, thin, whip-like shoots which grow thickly from the base of the trunk, in a matted tangle. They are no bigger than a Walnut, but when rosy and ripe, delicious.

It rained steadily most days, though occasionally we had a fine morning or a fine afternoon; but the river had fallen a lot, so evidently the rainy season was slackening.

Arrived at the Seinghku, the Tarons and others decided that they could not march next day. However, I could not afford to lose a day now, and told them they would just have to, so they did. Flowers began to increase again, but I found little that was new to me, although I collected a couple of rather striking Zingiberaceae, with fragrant flowers, two Orchids, two Begonias, and other things. There had been something of a lull in blood pests, particularly leeches, but at this camp, which was in an open meadow, sand flies were as common as Blackberries.

While searching for a few capsules of the social 'Irroratum' Rhododendron on the hogsback next day, I observed several interesting plants. My attention was first called to a solitary big-leafed, tree Rhododendron, stuffed with large bunches of rust-red capsules; from its general appearance, and the large leaves leaning downwards, I judged it to be a 'Grande,' and I sent a man up to the top to hack off a few branches. Imagine my delighted surprise to discover that it was an 'Irroratum'—the capsule and leaf, despite its great size, admitted of no doubt. Most of the Burmese 'Irroratums' have scarlet flowers, and this tree in full bloom on the knife-edge of the ridge must have been a never-to-be-forgotten sight. The largest leaves I secured were a foot long and six inches wide.

Near the village, beneath a gigantic Oak, I picked up the butter-golden corollas of an epiphytic Rhododendron; but the plant was away up out of sight, screened behind the dense foliage. Several times in the course of the next few days I was tantalised by the sight of pools of melted butter, as it were, in the forest, where this species had scattered its flowers, but the plant kept right out of sight, very high up. And then on September 25, I found that one or two epiphytic 'Maddeni' Rhododendrons, on which I had had my eye ever since June, were this butter-gold species. The flowers are small for a 'Maddeni,' borne in trusses of four to six, scentless, but of so unusual a colour as to proclaim the plant a first-prize-winner. No doubt it is not quite hardy, except in the mildest districts; we have named it R. chrysolepis (K.W. 7,455). Its fellow epiphyte (K.W. 6,809) growing on the same tree, did not flower while I was there.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, October 1, 15, November 5, and 19, 1927.

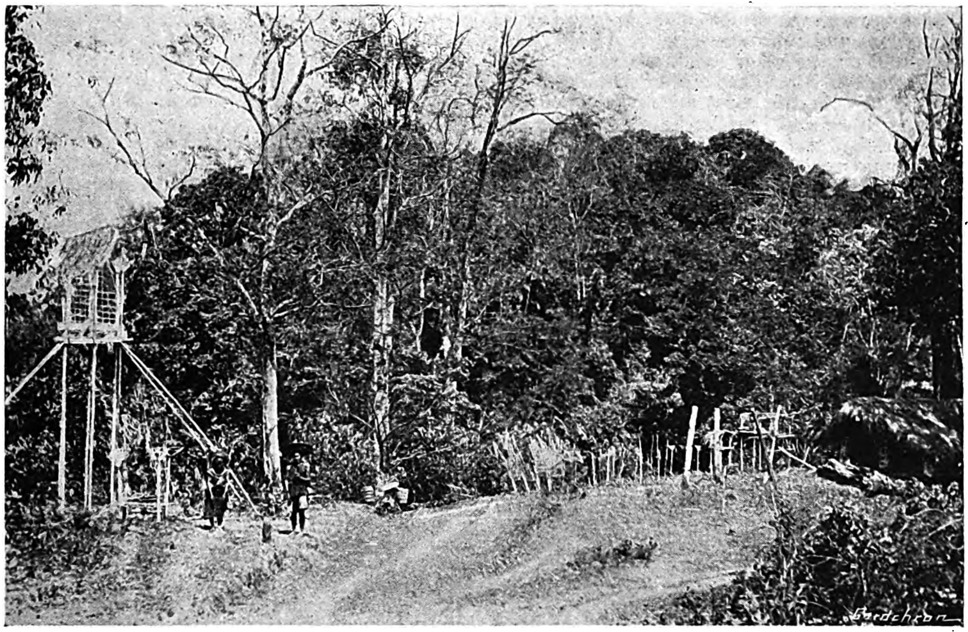

FIG. 204.—A KACHIN "NAT" ALTAR IN THE HILL JUNGLE, UPPER IRRAWADDY.

By the time we reached my base camp we had run the gauntlet of thousands of famished leeches which were just sitting up and waiting for us, and the almost naked coolies arrived with arms and legs striped like a Bengal tiger; one man was so covered with blood, which streamed down his face, as to be unrecognisable. The meadow had grown waist-high, and it harboured all kinds of loathsome life besides leeches. Our home-coming was quite like our departure. I had cherished a fond hope that by the end of September conditions would be on the mend. Vain delusion! My hut was a sty, full of earwigs, cockroaches and all uncharitableness. It was mouldy, the roof leaked, the floor was littered with leaves, and the wind moaned through the chinks. However, by the time I had lit the fire, things began to mend, although the fire smoked most evilly for the first two days, because the wood was so wet.

Next day the coolies had to depart, as we could not feed them. The girls took half their wages in beads, which were doled out by the chokara who, knowing the exact value of beads to Nung damsels, was much more frugal than I would have been.

Now began the usual tussel with the headman, over coolies. I wanted to go straight back to my alpine camp—there was nothing to do here; and the headman promised coolies day after day, and always it was "to-morrow they shall come, Bimbo." And to-morrow came, and came again, and still I was kicking my heels at the base camp. Finally, exasperated, I became extremely rude, so much so that when, on September 25 the headman arrived with a small deputation singing the usual "to-morrow" chorus, I laid hands on them and pressed them into immediate service, under pain of sudden death. So we started for the upper valley with seven coolies (two of whom were my own servants), taking the barest necessities for a few days' existence, and trusting to the remaining loads following in a day or two; the great thing was to make a beginning.

Down in the valley the Maize was ripe, and mostly gathered in, and I got some Peaches which tasted better than they looked. Epiphytic and climbing plants were flowering, amongst the latter being one or two species of Crawfurdia, and a Clematis (including C. urophylla, with tottering, cream-coloured flowers), a fine Composite (probably Senecio) and other things; the epiphytes were mostly such as I had previously met with. In the meadow grew giant Thistles, fifteen or eighteen feet high, with rather ridiculously small heads of pale yellow flowers; with species of Umbelliferae, Swertia, Anemone japonica, Campanula colorata and various grasses.

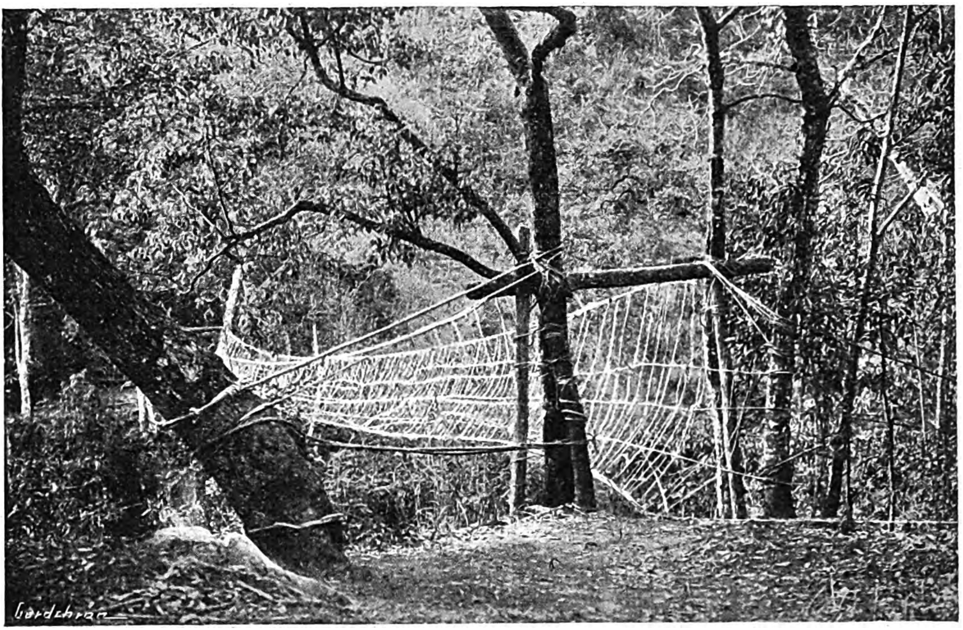

FIG. 205.—CANE BRIDGE OVER A TRIBUTARY OF THE IRRAWADDY.

When we reached the upper forest things were more interesting. There was nothing much in the undergrowth except a variety of small-flowered Impatiens, and a queer, colourless, saprophytic Orchid; but I found all the trees and shrubs I was keeping a watch on. The beautiful, small-leafed Holly (Ilex nothofagacifolia), though not quite so rare as I thought in the tanglewood, had set very few seeds; in fact, only three trees in the two or three dozen I found had flowered this year, and they were all so smothered with moss, it was clear they were not happy here. The tanglewood did not escape the notice of Shakespeare, for to what else can these lines refer!

> The trees, though summer, yet forlorn and lean,
> O'ercome with moss and baleful Mistletoe.

In wealthy fruit, I. nothofagacifolia must be a wonderful sight. The berries are very small, almost sessile, bright scarlet, and resemble rows of wee beads sewn along the framework of the flat, green, wing-like branches.

By the time we got up to the temperate rain forest—Quercus, Ilex, Magnolia mollicomata, Rhododendron sino-grande, etc.—we had our heads well into the clouds, and the usual steady drip, drip, drip, from the vast canopy overhead, made the prevailing gloom even more grim. It was almost dark by the time I reached the alpine meadow; I noticed that all the snow had gone, that the barren earth screes where the packed snow had lingered so late, were covered with a rank growth of herbs, and that the sappy meadow was almost impassable. I was soaking wet, and expected to find a soggy tent pitched at the slope of an aqueous meadow, where every prospect pleases, and only man is vile. Nothing of the sort. The Tibetans had built themselves a fine, new shelter, with a solid bark roof and a bark floor, larger even than the hut at my base camp; so I promptly took possession and lit a fire, and was quite comfortable. *F. Kingdon Ward.*

NOTICES OF BOOKS.

Plant Pest Control.

As plant pests and diseases, like the poor, are always with us—in spite of the enormous sums expended annually on their destruction—this authoritative volume* on the general subject of pest-fighting measures will be welcome to all horticulturists who have a working knowledge of the German language. The work is the eighth volume of a series entitled "Chemie und Technik der Gegenwart" (Present Day Chemistry and Technics). Its nearly 450 pages are closely printed and full of matter; there is no padding, and the information is given in as interesting a form as so technical a subject will permit, the text being clarified and illustrated by a number of excellent diagrams and photographs. The author is well versed in his subject, and holds the important position of Regierungsrat at the State Biological Institute in Dahlem, Berlin. He passes in review the entire field of pest destruction and prevention, and it would be hard to mention a single measure with which he does not deal, at least cursorily. On p. 110 he mentions that, in Holland, bulbs are treated with hot water as a precaution against eel-worm; as is well-known, this treatment, after many experiments, was adopted several years ago in British bulb-growing districts, and has been found eminently successful.

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* *Schädlingsbekämpfung* Von Dr. Walther Trappmann. Leipzig: S. Hirzel. Price: paper, RM. 20., bound, RM. 22.

The greater part of the book is naturally occupied with the consideration of the many hundreds of chemical remedies in liquid and other forms. It may, perhaps, be a surprise to some readers to learn that Pliny, the historian, records some early experiments in treating seeds with oil, fat, or pitch, mixed with a decoction of Cypress leaves, to protect them against marauding pests. In the middle ages, crude attempts were made to drive away insect pests by various means, including the burning of human hair to cause a disagreeable smell. But it was only at the beginning of the nineteenth century that serious measures began to be taken to compose chemical insecticides with a basis of some material known to be poisonous to insect life.

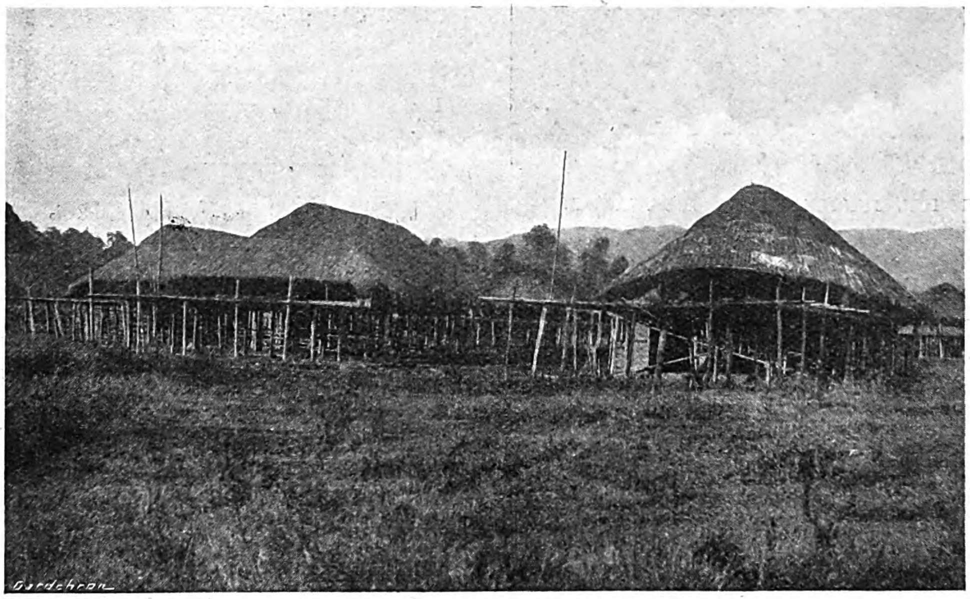

FIG. 206.—MR. F. KINGDON WARD'S EXPEDITION: SHAN HUTS ON THE HKAMTI PLAIN.

When dealing with the effects of the various chemicals, the author mentions the fact which has often been noted, that a frequent "bye-product" of the application of a remedy is the actual stimulation of the growth of the plant treated. Stimulation, for instance, by hydrocyanic acid gas, a well-known remedy for White Fly in greenhouses, was made the subject of experiments by two professors at Brunswick Botanic Garden last year, who found that the flowering period of certain forced plants could be definitely advanced by the application of this gas. (See *Gard. Chron.*, February 5, 1927, p. 101.)

The question of "spray v. powder" for orchards and vineyards, which has vexed so many growers, is discussed by Dr. Trappmann, and the conclusion reached that, on the whole, liquid spray is preferable for small plantations of fruit trees, vines, etc., as it is simple to control, and the operator may see quite easily when a certain portion of the crop has not been reached by the chemical. For very large areas, however, and especially for places remote from a water supply, the powder form is recommended, as it may be more quickly applied, there is little delay in loading the spraying apparatus, and the necessity of transporting water for diluting the spray material is entirely avoided. Those who have visited some of the steep, terrace vineyards of southern and central Europe will appreciate this last advantage at its true value.

Bird preservation, for the destruction of caterpillars and wireworms, is used on the one hand, and on the other hand, sparrow destruction is dealt with, and the author speaks approvingly of the English "rat and sparrow clubs." Perhaps he does not realise how many friendly and useful insect-eaters are sacrificed in the zealous pursuit of "sparrows" by the younger members of these clubs.

Hydrocyanic acid gas is mentioned as excellent for ridding houses of pests, but the author states that, although much used in Germany for the fumigation of ships, mills, and granaries, the use of this chemical for hot-houses is not now common.

The State organisation of pestology seems to be farther advanced in Germany than in this country, and Dr. Trappmann gives (pp. 413 *et seq.*) an interesting account of the various departments dealing with the subject. Lack of space forbids details, but this section of the book is by no means the least informative, and should interest entomologists and others concerned in the co-ordination of activities of widely differing kinds, but all designed for the purpose of stamping out plant pests and diseases.

A full bibliography and an excellent index complete the work, which will no doubt find a place on the shelves of those who feel they require up-to-date guidance on a subject, which, unhappily, affects every nurseryman and gardener, no matter what the nature or condition of his produce, or the climate in which he works.

Root Development of Vegetable Crops.

This book,* published by Messrs. Weaver and Bruner, the former of whom has taken a leading rôle in root researches during the past two decades, supplies a need long felt by all concerned with the science and production of vegetable crops. Perhaps in no other field is an accurate knowledge of the nature and development course of root systems more necessary and useful. Vegetable gardening is an intensive process. Water relations, fertility problems, and cultural practices, such as transplanting and cultivation, are ever critical. And, in addition to these considerations, there is the special fact that since some vegetable crops are grown for their foliar parts or their fruits, and others are produced for their roots exclusively, the relative growth and size of top and root are of primary importance.

The authors have covered a wide range of vegetable crops (thirty-two in all), grown under various aerial and soil environments. Root excavations were made and data taken carefully at successive periods of the growing season, beginning at the seedling stages of the plants and ending with their maturity in the case of annuals, while following non-annuals beyond the first year. The valuable results obtained in this work are presented in an attractive, comprehensive and forceful manner. As a supplement, the literature on the question is well reviewed and interwoven. The chapter summaries are excellent. The paragraphs headed "Root System in Relation to Cultural Practices" are especially noteworthy, showing as they do just what may be accomplished through an understanding of the plant's underground parts.

The authors are to be congratulated on their achievement. The book is recommended unreservedly to plant scientists, plant growers, teachers and students of horticulture, in fact, to all who are interested in knowing the plant as a functioning whole in order that they may deal with it more intelligently and profitably. *J. W. Crist, Michigan State College.*

PUBLIC PARKS AND GARDENS.

The late ex-Provost Duncanson has bequeathed £3,000 for the improvement of the public park or pleasure ground at Alloa.

Bourne Urban District Council proposes to purchase three acres for a recreation ground for the hamlet of Dyke, in the Bourne urban district.

Billingham Council proposes to ask the Newcastle-on-Tyne Electric Supply Co. if it is prepared to lease to them a field at Mill Lane for a recreation ground.

The Heston and Isleworth (Hounslow) Urban District Council has received the sanction of the Ministry of Health to the purchase of land at Cole Park for an open space.

Seaford Urban District Council has resolved to make application for the sanction of the Ministry of Health to the purchase of Seaford Head for a public open space. The purchase price is £16,500.

The Ministry of Health recently held an inquiry into an application by the Southport Town Council for sanction to borrow £65,500 for the purchase and part development of approximately 750 acres of land in Birkdale and Ainsdale for an open space.

The Town Council of Warwick is recommended to promote a Bill in Parliament authorising the purchase of St. Nicholas Meadow for conversion into a park or recreation ground.

Sir Frank Sanderson, M.P. for Darwen, has offered a piece of land near The Pells, Lewes, Sussex, to the National Playing Fields Association, for use as a playground for children.

The Ramsbottom (Lancs.) Urban District Council has agreed to purchase Nuttall Hall and five acres of land for pleasure grounds. The purchase price is £2,400.

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* *Root Development of Root Crops*, by John K. Weaver and W. E. Bruner; McGraw Hill Book Co., 6 and 8, Bouverie St., London, E.C. 4, and 670, Seventh Avenue, New York. Price £1.

MESEMBRYANTHEMUM.

(*Continued from page* 430).

12.—GLOTTIPHYLLUM, HAW.

9. G. praepingue, N. E. Br., in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9 (Fig. 207).—Haworth's characters for this species are :—Leaves of different shapes and lengths—some tongue-shaped with points obliquely recurving—some between semicylindric and tongue-shaped—others narrower, longer and without any oblique curve or ridge near the points—others with subulate triangular points and ending in harmless, white bristles or short points—and a few with broad, compressed, subdolabriform, keeled points ending in short, white, bristly hairs, exceedingly fleshy, fat and soft to the touch (on which account I have named it praepingue — "very fat"); light green, shining, faintly impunctate, whitish and shining near their inner bases or as if frosted over with exceeding minute papillae, the young leaves minutely ciliate at the edges. Flowers nearly sessile (sessile ex *Rev. Pl. Succ.*, p. 95). Pedicel, if any, exceedingly short, rather angular and smooth. Calyx unequally 4-lobed; all the lobes with membranous edges and ciliate keels, two of them larger than the others, with broad, plain dilated bases, triangular points and slightly membranous edges, the other two shorter, with broad, brownish, reticulated margins. Corolla not so large as that "of my lingueforme" (*i. e.*, 21, G. latum, N. E. Br.), of long duration; petals, linear-lanceolate, broad, minutely denticulate at the apex, bright yellow, shining. Stamens erect, expanding, yellow. Stigmas 8, plumose. Capsule sessile (*Rev. Pl. Succ.*, p. 95), small, with 8 blunt ridges and a large deep central hollow on the top, 8-celled.

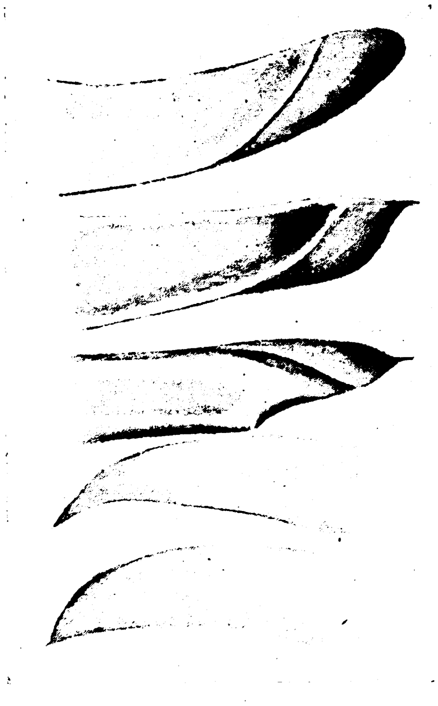

FIG. 207.—GLOTTIPHYLLUM PRAEPINGUE.

Apical halves of leaves; natural size. Leaf-pairs crossing. Flowers sessile.

The above characters are as given by Haworth, but arranged differently, and clearly demonstrate that the plant figured by Salm Dyck (*Mes.*, §7, f. 5) as M. praepingue cannot be the same as that described by Haworth under this name, there being no mention made nor representation in the figure of the "bristles or short points" (*i. e.*, what is botanically called a mucro or apiculus) at the tips of any of the leaves; the flower is very distinctly pedicillate and the stigmas 10. I have therefore described Salm Dyck's plant as distinct, see 4, G. subditum, N. E. Br.

G. praepingue has long since died out of cultivation, but I believe that a plant recently introduced is specifically identical with that which Haworth described, since it fairly agrees with his description and is entirely different from the plant Salm Dyck and all other authors have mistaken for it. The following is a description of it compiled from four different living specimens :—

Leaves with the pairs more or less obliquely crossing one another, ascending-spreading, straight or curved to one side, 1¾–3¼ inches long, 5–8 lines broad at the middle, 4–5 lines thick, somewhat variable, sometimes parallel sided below and narrowing from above the middle to an acute or subobtuse point, sometimes gradually tapering from the base to an acute or obtuse apex, which is tipped with a short, whitish or brownish mucro or point that often disappears with age, and which I conceive to be the "bristle or short point" of Haworth's description; flat or faintly convex on the face, often with an oblique ridge or keel near the apex of the larger leaf where the flat part ends, caused by the pressure upon it of the opposed leaf in bud; convex on the back and becoming slightly keeled or triangular at the apex of the smaller leaf or sometimes of both leaves of a pair, but in more adult growths the apex of the larger leaf is more or less compressed and keeled, and slightly twisted to one side; substance very soft and pulpy; surface smooth, but under a strong lens seen to be covered with short, linear, raised surface-cells, transverse to the leaf, glabrous, light green, pellucid-dotted, sometimes appearing under a lens as if frosted at the basal part. Flowers sessile. Calyx in mature bud about 5 lines in diameter, acutely 2-angled, produced above its union with the ovary into a tube about 1½ line long, 4-lobed above; lobes about 5 lines long, ovate, with membranous margins, two of them acute and acutely keeled on the back, and the keel distinctly ciliate, and two obtuse. Corolla 1½-1¾ inch in diameter, cup-shaped, expanding in the morning even in dull weather if the temperature is sufficient, but more widely open in bright sunshine; petals 45-50, in two series, all united for about two lines at the base, 11–14 lines long, ¾–line broad, linear, acute, entire, clear yellow on both sides, not shining. Stamens erect, somewhat loose (this may be what Haworth means by "expanding"), entirely yellow. Stigmas 8–10, spreading, 2–lines long, acute, plumose, whitish. Ovary half-superior, 8–10-celled. Capsule when closed 5–7 lines and when expanded 9–11 lines in diameter, with 8–10 valves and cells; valves horizontally spreading, 2½ lines long, pallid, with dark brown, expanding-keels, half as long as the valves and diverging from the base, acute and often very minutely toothed along the top, ending precipitously under the base of a minute terminal, awn-like point or tooth, without marginal wings; cells roofed with rather stiff, brownish cell-wings, and the opening nearly closed by a large, compressed, cream-coloured tubercle. Seeds about ⅔ line in diameter, nearly circular in outline, compressed, minutely tuberculate, dark brown.

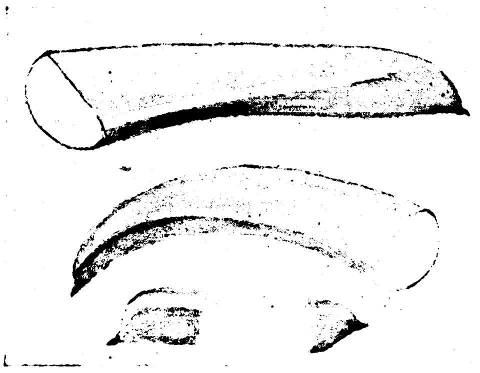

FIG. 208.—GLOTTIPHYLLUM APICULATUM.

Portions of leaves; natural size. Flowers pedicellate.

Mesembryanthemum praepingue, Haw. *Obs.*, p. 179 (1795), *Misc. Nat.*, p. 35, *Syn. Pl. Succ.*, p. 222, and *Rev. Pl. Succ.*, p. 95, excluding the reference to "M. heterophyllum, Jackson in Andr. *Bot. Rep.*, t. 540 ?"; not of Salm Dyck nor Berger.

South Africa: Locality unknown, introduced by Masson in 1791, according to Aiton. But the plant above described as probably being the species was sent to Kew Gardens by Miss Wilman as coming from Prince Albert Division. And a plant of it in my own collection was sent to me as having been collected at Klaarstroom, near the Zwartberg Range, in Prince Albert Division, by Mrs. van der Bijl, 3!

Mrs. van der Bijl informs me that she "found few perfect plants as the stock seem to have eaten most of the centres out."

Fig. 207 is drawn from various leaves on the plants described above, of natural size, but the apiculus represented at the apex of the leaves often disappears.

10. G. apiculatum, N. E. Br. (Fig. 208).—Leaves probably about 2 pairs to a growth when resting under natural conditions, but under cultivation 3–4 pairs to a growth, with the pairs placed very obliquely or at right angles to one another, ascending-spreading, and one of each pair usually slightly recurving, mostly 1¾–2¾ inches long, sometimes shorter, 4–7 lines broad and 3–4 lines thick at the base, thence gradually tapering to a subacute apex, which is always tipped with a very short, hard, reddish point or apiculus; flat or faintly convex on the upper side, bluntly keeled down the back at the upper part and there trigonous in transverse section, with the sides convex, microscopically ciliate on the edges and apical part of the keel of the younger pair of leaves, the cilia disappearing with age; substance fleshy; surface smooth, glabrous, with the surface cells not raised into short and minute transverse ridges but microscopically and densely papulate, as seen under a very strong lens, uniformly grass-green, not at all glaucous and not pellucid-dotted. Pedicel ½ inch long, slightly compressed, 2-edged, 3 lines broad and 2 lines thick, smooth, green. Calyx subequally 4-lobed, green or tinted with purple; lobes about 3½ lines long and 3 lines broad, ovate, obtuse, two of them acutely keeled and with a blunt dorsal point, and two with white membranous margins. Corolla 2–2½ inches in diameter, expanding in the morning irrespective of sunshine if the temperature is sufficient, closing about 7 p.m.; petals in 1–2 series, ascending-spreading, 10–15 lines long, 1–1½ line broad, cuneately linear, obtuse and often denticulate at the apex, bright yellow, not shining. Stamens

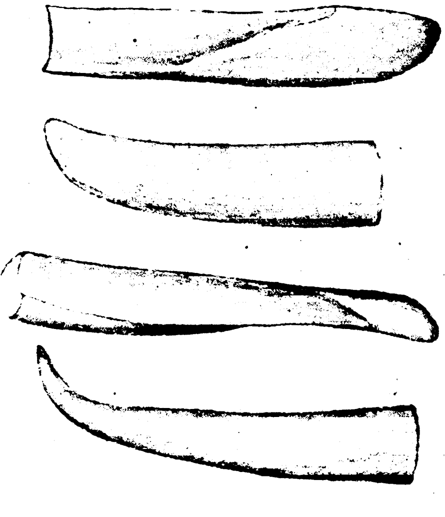

FIG. 209.—GLOTTIPHYLLUM CONCAVUM.

Apical parts of leaves, all from one plant; natura size. Flowers pedicellate.

very numerous, erect, forming a ring, leaving the stigmas exposed to view, 4 lines long; filaments and anthers yellow, the former not bearded. Stigmas 8, 1½–2 lines long, radiately spreading, plumose, light yellow. Ovary slightly convex at the top, 8-celled; placentas on the outer wall or floor of the cells. Fruit not seen.

Oudtshoorn Division: Near Oudtshoorn, Marloth 12187!

Described and Fig. 208 (see p. 449) prepared from a living plant received from Dr. R. Marloth. This species bears some resemblance to G. praepingue, but its leaves are of firmer substance, not pellucid-dotted, and its flowers are pedicellate.

11. G. concavum, N. E. Br. (Fig. 209, p. 449).—Rootstock bearing a number of crowded growths at the top, on very short divisions scarcely amounting to branches. Leaves 2–3 pairs to a growth, ascending until old, then spreading, 1¼–5½ inches long, 4–9 lines broad and 3–5 lines thick at the base, narrow, somewhat semiterete and slightly tapering to an acute or blunt apex, usually somewhat curved or slightly sigmoid, one leaf of a pair concave and the other convex on the face, the concave leaf usually keeled on the back and often slightly twisted; soft and pulpy, smooth, glabrous, grass-green, the older leaves (but not the younger) distinctly pellucid—dotted when held against the light. Pedicel about 9 lines long and 3 lines thick, somewhat semiterete, being slightly flattened on one side and somewhat 2 edged. Calyx in mature bud 6–7 lines in diameter, 4-lobed; lobes 4–6 lines long, more or less keeled and three of the keels minutely ciliate, the outer lobes acute and the inner obtuse, with a dorsal point and broad membranous margins. Corolla 2–2½ inches in diameter, opening in the morning, even in dull, sunless weather at a temperature below 60° Fahr.! Petals numerous, free, or nearly so, in two distinct series, 12–16 lines long and 1–1½ line broad, linear, obtuse and scarcely toothed at the apex, bright clear yellow on both sides, not shining. Stamens numerous, collected into a central mass, 6–7 lines long, quite concealing the stigmas, yellow. Stigmas 10, radiating, 1¼ line long, plumose, yellowish.

Described and Fig. 209 prepared from a living plant sent to me by Mrs. L. Bolus. This species must be nearly related to G. angustum, Haw., but according to Haworth's description of the latter species, it differs by its pedicellate flowers, much smaller corolla and free or nearly free petals. The long and narrow leaves (which, when received, were only 4–6 lines broad, but have now become broader and thicker) concave on the upper side of the longer of each pair, distinguishes this from all others known to me. *N. E. Brown.*

(*To be continued.*)

COMPENSATION FOR MARKET GARDENERS.

If the gardener is a tenant of a market garden to which the provisions of the Agricultural Holdings Act of 1923 apply, that is, those market gardens which come under the two classes of gardens described in my previous article on this subject, he will be entitled to claim certain privileges with regard to compensation for improvements and the removal of non-permanent fruit trees and bushes, and structural additions to the property and buildings which he has himself erected or acquired.

Dealing in the first place with the question of what compensation he is entitled to claim and for what improvements, the improvements in respect of which compensation is claimable are to be found in the third Schedule to the Act of 1923, and are: (1) planting of standard or other fruit trees permanently set out; (2) planting of fruit bushes permanently set out; (3) planting of Strawberry plants; (4) planting of Asparagus, Rhubarb and other vegetable crops which continue productive for two or more years. With regard to these improvements, the tenant is entitled to claim compensation for them, even though he has carried them out without notifying his landlord or without first obtaining his consent to them. So long as the holding is a market garden to which the provisions of the Act apply, the tenant will be entitled to claim compensation.

All the above improvements, it will be noticed, are improvements which the market gardener has himself carried out, the words used being in every case "planting of . . . ." This still leaves us to deal with those improvements which an incoming tenant has *purchased* or acquired, and with regard to this latter class, the tenant may claim compensation for them under the provisions of section 48 (i) of the Act. The relevant provisions of this part of the section read as follow: "The right of an incoming tenant to claim compensation in respect of the whole or any part of an improvement which he has purchased may be exercised, although his landlord has not consented in writing to the purchase." Thus, if the improvement has been purchased compensation can still be claimed, whether the tenant has obtained his landlord's written consent to the purchase or not. This provision, when set out in full, seems to be quite clear, and no further explanation would appear to be necessary.

The next part of the section deals with the removal of fixtures and buildings which have been erected by the tenant on his market garden, and we must now turn our attention to this subject. The rights of the tenant with regard to the removal of buildings which he has himself put up are that he can recover every such building that he has at his own cost erected at any time, or any building he has acquired since December 31, 1900, for the purpose of the trade or business of a market garden.

This leaves us only fruit trees and bushes which *cannot* be said to be permanently set out, to deal with, for, as we have seen, compensation can be claimed for those which are *permanently set out*, these words being employed especially. With regard to fruit trees and bushes which are not so permanently set out, however, section 48 (i) of the Act provides that a tenant may remove all fruit trees and fruit bushes planted by him on the holding and not permanently set out, but if the tenant does not remove such fruit trees and bushes before the termination of his tenancy they shall become and remain the property of the landlord, and the tenant shall not be entitled to any compensation.

So that the tenant although not entitled to compensation, may remove non-permanently set out trees and bushes, provided he does so before the end of his tenancy. It is important that the effect of this section should be known, otherwise the tenant may, through ignorance, find himself less well off than he might have been. *H. Sharman.*

ROADS OF REMEMBRANCE.

Anything more bare and devoid of beauty than the banks of a new arterial road it would be impossible to imagine, especially where excavations or embankments have brought the subsoil to the surface. Feasible schemes to beautify them should have the whole-hearted support of all lovers of the countryside, but it is questionable if the scheme proposed by Richard Rigg (p. 412) comes under this category.

Arterial roads are costly to make and maintain, and would never have been made except for the urgent reason that more space and a better view of the quickly oncoming traffic were necessary. It is hardly likely, then, that those concerned, viz., the Ministry of Transport and the Local Authority will hand over the sides of these roads for the purpose of beautification, unless very responsible guarantees in regard to the work are forthcoming. They would have to consider the obstruction of the view of the road, especially in the case of curves, etc., and the fact that before any successful planting could be done considerable preparation, including much heavy ground work, would be necessary.

There would also be the question of maintenance, for the work once begun should be carried out in good order and protected afterwards. Who is to give these guarantees and be ultimately responsible? The Chairman and Committee of the Roads of Remembrance Association? If so, how are they to control the mixed, voluntary forces that may be at their disposal?

These forces are to consist of persons experienced in planting, leaders of organisations of young people, and the boys and girls themselves, especially "those who live in crowded homes *without a garden*." (The italics are mine.) In other words, boys and girls who have never handled a spade are to be regarded as specially desirable. The officers may be excellent, but I am afraid that the rank and file will be rather weak for the work. It is too much to ask even young professional gardeners to undertake the heavier ground work in their spare time, but they might be found willing to plant a tree and look after it, especially if it bore a label recording the fact.

Those of us who live close to main roads know full well how thick the traffic is, particularly on Saturdays and holidays; indeed, it is often dangerous for an experienced person to cross the road. Yet it is on these days that children are to be brought out into strange surroundings and dumped on either side of our arterial roads! Can a more fruitful source of accidents be imagined?

When the grass plots have been turned into gardens, and the trees are in bloom or fruit, who is to attend to or protect them? That they would need protection, gardeners and owners of property know only too well. When your correspondent writes of using flowers grown on the roadside to adorn the Cenotaph he is like the dairymaid of old—looking forward to the future with optimism.

There remains the question of how this innovation would be regarded by those whose property adjoins the road. The trees would necessarily be planted close to the fence, for several reasons; first, because of the danger of obstruction to the view of the road, and also because if any natural soil is left it would probably be found near the fence. Trees in such a position would eventually overhang the ground adjoining, and any fruits borne on them would become the owner's property. But hedges under trees are always weak, and what boy could resist passing through to look for fallen fruit? I understand they manage these things better on the Continent; perhaps the boys are more saintly—or less enterprising!

While most of the proposals suggested on p. 412 are impracticable, the suggestions that boys and girls should collect the seeds of suitable wild flowers and sow them on the bare banks is excellent, and would probably be successful. *J. Comber.*

FRUIT GARDEN.

TWO GOOD LATE DESSERT APPLES.

Some very interesting notes on Apples appeared in your issue of November 19, and I venture to comment on two varieties.

Your correspondent *Market Grower* wisely states that if only we had one or two good late dessert varieties we could compete, throughout the winter, with the imported Apples which now hold undisputed possession of our markets at that time. Later on, he refers to Laxton's Supreme, and I presume this is a slip of the pen for Laxton's Superb.

If market growers want a late variety to compete with the foreigner, surely Laxton's Superb fills the bill. It has only to be tasted to be acclaimed. I detest the usual childish and silly question "Is it better than Cox's?" It is neither better nor worse than Cox's Orange Pippin, but it has a most delicious flavour entirely its own, and it is a worthy follower of that variety. Further, it is a free and consistently annual cropper. I regard it as one of the really great market Apples of the future, especially when the public becomes educated to the fact that a brilliant scarlet skin does not inevitably indicate an Apple that is good to eat. I saw an Apple exhibited at two recent R.H.S. meetings, bright scarlet all over, yet I would not eat it. Laxton's Superb is not of this type, but is an Apple that one may eat with enjoyment, and when ripe it possesses a warm, mellow colouring, without the brilliancy of some of the "shop-window" sorts.

Another Apple mentioned by *Market Grower* is that nice little Belgian variety, Reinette Rouge Etoilée. I know this Apple well, and having grown it for many years, I can assure your correspondent that it is of very fine flavour and quality, though not, perhaps, in the very front rank. A peculiarity is that it carries its bright red colour right into its flesh in many cases, giving a cut fruit a very appetising appearance.

Saltcote Pippin is admirably illustrated in the issue of November 19, p. 411, but no picture can give an idea of its attractive colouring, as those who saw it exhibited at the R.H.S. meeting on October 11 will remember. It is streaked and flushed with yellow and a mellow shade of red, and overlaid here and there with russet. That old Apple grower, Mr. Joseph Cheal, remarked to me that it "had the look of a well-flavoured Apple," and he was right. I feel quite confident there will be an excellent opinion of Saltcote Pippin when it is duly introduced to the public. *F. Herbert Chapman.*

VEGETABLE GARDEN.

THE CARDOON.

Cardoons are not cultivated extensively in this country, but this need not deter anyone from growing them, especially as they make a welcome addition to the vegetable supplies at this time of the year. The blanched stalks of the inner leaves form the edible portion of the plant, as well as the thickened main root, and when cooked to a fine degree of tenderness they have a distinct and agreeable flavour.

They are generally grown in trenches in much the same way as Celery but, naturally, they need more room. Good cultivation throughout is essential, as the slightest check at any period of growth causes bolting and the crops become useless.

If early supplies are required it is customary to sow seeds in heat in March or April and plant out at the end of May or beginning of June. If this practice is followed it is better to sow the seeds singly in small pots so that the plants may be handled easily for hardening off and transferred to their permanent quarters without check. Equally good results may be obtained by sowing seeds in the open trenches in May. If cold nights ensue, the seedlings may be protected by inverted pots, but when established they grow away rapidly and by September make sufficiently large heads for blanching.

Great care should be taken with blanching as unless this is thoroughly done the inherent delicate flavour of the Cardoon is not brought out. The most satisfactory method is to bind soft hay-bands around the plants, after which the soil may be drawn up to and pressed firmly about them. *A. P. C.*

HOME CORRESPONDENCE.

Birds and Fruit.—Do your correspondents under this heading, on page 333 (October 22) realise what would happen if birds were entirely banished from farms, gardens and orchards? Probably not, but if they *knew* more about the subject and took the trouble to study the *evidence in favour* of the birds they would quickly change their views. It is the same old tale. The birds are blamed and penalised for the (comparatively) small amount of damage they are seen, or often only believed, to do at times, but the vast amount of good they are doing all the rest of the time is unknown, or wilfully overlooked in order that somebody with a gun may indulge in the Englishman's notorious desire "to go out and kill something." I recommend your correspondents, after they have read Miss Gardiner's note on p. 412 (November 19), and carefully studied Dr. Collinge's book* (published by Dulau and Co., Ltd., 32, Old Bond Street, W.1., at 2s. 10d., post free) to send 1s. to Miss Gardiner, 82, Victoria Street, S.W.1., for a copy of *Farm, Garden and Birds*, and the leaflet on *Birds, Insects and Crops*, from which they will obtain directions, suggestions and hints from practical growers for the safeguarding of crops and fruit without destruction of bird life. I notice that *T. L.* recommends the use of "Nipper" mouse traps for catching birds, but this kind of trap is one of the most brutal and uncertain traps ever invented. I remember a case, when we used this trap at home, of an unfortunate mouse being caught by one leg and thus spending hours of agony until it was discovered in the morning. A bird might be caught by leg, wing, tail, or even beak, and dangle in the tree for hours before discovery. This trap should be entirely prohibited, as the pole-trap is, and the abominable steel-toothed traps ought also to be. *C. Nicholson.*

—— Certainly, so far as concerns this place, a portion of the quotation from Dr. Collinge's work given by Miss Gardiner (*Gard. Chron.*, November 19, p. 412), needs transposing, and should read: "The benefit it confers is comparatively insignificant when compared with the great harm it does." The earlier work of Dr. Collinge, that I have seen, was largely based on the findings of insect remains, etc., in the stomachs; now I venture to think that it would require an almost superhuman observer to recognise the small amount of Pear or Apple in a tit's stomach, which would remain after pecking at the fruits and irretrievably spoiling them; I estimate the amounts taken at about fifty cubic millimetres. Based on this method of observation, let us picture Mr. Richards as an M.F.H. adjudicating poultry claims—he would say, "We have examined the stomachs of all the foxes killed last year, and we have failed to find either cock's combs or duck's eyes; consequently, your claim for ducks and cocks cannot be upheld." I judge by another method, that of damage done—for instance, this year I had a small crop of Doyenné du Comice Pears, perhaps a dozen-and-a-half; they were round about 14 oz. to 15 oz. in weight each, and were bagged up early to protect them. The tits pecked through bag and skin and removed some fifty or sixty centimetres of the pulp from all but one; result, we only had one Pear on the table. Some half the crop of Cox's Orange Pippin was similarly spoiled, though the fruits were bagged. It seems that gauze bags are rather more effective than paper ones, especially than the translucent paper. Not a few yards away is an antique Golden Noble tree, swarming with woolly aphis and all sorts of good insect food (Apple Sucker, Aphis, Lygus, etc.), but these the tits leave practically untouched. I offer a hearty invitation to Mr. Richards to come and study the question in my garden before he again rushes into print on the subject; perhaps he may then be able either to advise me how to get rid of the pest or how to protect my crop. *H. E. Durham.*

—— As an amateur grower of British fruits, country bred and on the land all my time, I claim to be able to write about the wholesale destruction the little Blue Tits cause, more especially on the best exhibition fruits. It is no uncommon thing for these birds to spoil from ten to twenty fruits of Apples or Pears in a single day, consequently I have to use muslin bags, which entails time and expense. For myself, I would shoot the last of these destructive creatures, and I am quite sure most fruit growers would do the same. I know full well that every living creature does a certain amount of good, but the harm they do often outweighs the good, ten times over. *J. A. Stidston.*

Superphosphate and Peas.—I should like to point out to Mr. Roy that my note on "The Sowing of Peas" (page 252) was the faithful record of an experiment. I did not advocate the use of superphosphate as a factor in cultivation—for which Mr. Roy is pleased to make me responsible (page 412). My object was to compare the results of thick versus thin sowing. The warning against the use of superphosphate in the seed drills has no terrors for me, nor need it have any terrors for other gardeners, if their experience should prove to be like my own. The germination in the experiment to which reference was made was excellent. In addition, I am responsible for the cultivation of about fifty rows of Peas each year under the varying conditions of a large county. Superphosphate is used in every drill at seed time, at the rate stated in my note, and I have not heard complaints about bad germination, nor do I detect any evidence of it. On the contrary, I am convinced that the manure operates as a stimulus in the formation of roots, and for that reason I shall continue to recommend the practice. *Geo. H. Copley, N.D.H.*

Unwanted Flowers.—Readers of this paper will have been struck by the inconclusiveness of the result of the *Observer* competition referred to in your issue of November 5 (p. 357), an inconclusiveness to which we are accustomed in the columns of the ordinary Press. Does Sunflower refer to the annual, or to one of the perennials, or to all Sunflowers? I can understand Miss Mellish being unwanted, because with its rampant runners it is a thorough nuisance in a garden. Again, does "Aster" mean China or Comet, or Alpine Aster, or Michaelmas Daisies? I can understand the double China Asters not being wanted! "Geranium," no doubt, means the scarlet (and its varieties), Fancy and Scented Pelargoniums. There are a good many of the true Geraniums which are grown in gardens and are certainly not unwanted. *C. N.*

Foxgloves and Verbascums.—Whatever may be the explanation of the occurrences described by Edward O'Brien in your issue of October 15 (p. 313), he may be quite sure that Foxgloves will not grow from the seeds of Mulleins, or Mulleins from Foxgloves. Had he given some more data, it might have been possible to explain the mystery, and one would like to know (1) what had been grown on the ground where the white Foxgloves first appeared, and what was the nature of the "clearing up"? If it had been long fallow, was it dug at all? Seeds will lie dormant for many years in the ground, to spring up under favourable conditions after the ground has been dug or otherwise disturbed; (2) what did he do with the Verbascum and Foxglove seeds he saved? Did he carefully paper them, and, if so, is it possible that the papers could have got accidently mixed? It is pretty obvious that the second crop of Foxgloves resulted from seed dropped from the first few plants; but they may have been really part of the same crop as those, but did not germinate in the same year. This is a common occurrence. It is also obvious that Mr. O'Brien sowed the Verbascum seeds in the ground thinking they were Foxglove, and by some means sowed Foxglove seeds in the box—if it really was Foxglove; young Foxglove seedlings are very like the young seedlings of some Mulleins. Does Mr. O'Brien know what species the Verbascum was? Had he seeds of any other Verbascum by him at the time? I think there is no doubt whatever that the seeds were by some means interchanged, and if Mr. O'Brien will very carefully go over the circumstances he will, I am sure, find out where the hitch is. *C. Nicholson.*

Melaleuca hypericifolia.—An error has somehow crept into my note on Melaleuca hypericifolia (p. 363), as the sentence which begins at the foot of column two, viz., "Three years ago," should have read "Three years *later*," *i.e.*, the plants were finally planted out four years ago and only flowered a year past, in October, for the first time. *A. T. Harrison.*

Papaver umbrosum. — Papaver umbrosum seems to be of wayward habit. I had some seeds in 1914 which were scattered about on different sites. In 1917, one plant, the first, appeared;

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* A new edition (1926) of this book in nine parts, at 6s. 3d. each, may also be obtained by those who are sufficiently interested.

from this seeds were obtained, and scattered in numbers. In 1919, three plants appeared, and from them some of the seeds afforded about ten seedlings, which were transplanted, and made a fine show. Most of their seeds were allowed to sow themselves, and this autumn a single plant has appeared which looks as if it would confirm the idea that it is true to type. Its rich crimson-scarlet and black blotches make it a very effective ornament—when it is pleased to appear. *H. E. Durham.*

United Horticultural Benefit and Provident Society.—May I, through your columns, draw attention of young gardeners to the great advantages of membership of the United Horticultural Benevolent and Provident Society? Since the war, many young men have joined the ranks of the gardening profession, and a large percentage of them, no doubt, belong to one or other of the many well-known friendly societies. Yet the membership of the U.H.B.P.S. does not increase from year to year in anything like the proportion the officers and old members desire. It is only right and prudent that every working man, nowadays, should be a member of an approved society, but why, in the case of gardeners and nursery employees, do they ever look beyond this, our own, organisation? I think I may safely state, without fear of contradiction, that no other society in our country offers such unique benefits and advantages as this one, and, what is more to the point, it is in every respect soundly and economically managed by those responsible for its members' interests. Added to this, the National Health section of the Society's business is conducted in a prompt and exemplary manner; in short, the U.H.B.P.S. offers all the benefits of the popular friendly societies, and much more, with none of the drawbacks; and above all, it is the gardeners' own society. Personally, of course, I have no axe to grind, but as an old and satisfied member, it grieves me to find young men joining other societies to the exclusion of the one to which they should be proud to belong. If any young gardener is not fully cognizant of the aims and benefits of the U.H.B.P.S. he should write to the genial Secretary, Mr. A. C. Hill, Alexandra Road, West Kensington Park, London, W. He will, I am sure, obtain all the information he needs to persuade him of the wisdom of becoming a member. *Joseph E. Palmer, Tilstone Gardens, Tarporley, Cheshire.*

The R.H.S. Fruit Show.—In your issue of November 5, page 372, *Exhibitor* wrote regarding the inaction of the R.H.S. on certain matters, and up to now no one has made any comment on his charges. The reason, I presume, is that he did not sign his proper name. If he will do so, no doubt he will get the opinion of other exhibitors. *Exhibitor No.* 2.

Apple Cornish Gilliflower.—In your issue of the 26th inst., under the heading "Apple Cornish Gilliflower," page 430, a correspondent repeats the observation made many years ago by Dr. Hogg in his *Fruit Manual* that this Apple should be pruned with great care as it bears its fruit on the tips of the branches. Last year, I summer pruned my bush trees in the manner recommended by Mons. Lorette, viz., all the laterals when the thickness of a pencil were cut back to the base, leaving a stump not more than one-quarter-of-an-inch long. This year, I had a plentiful crop of fruits, the Apples, two and three together, sprang in a remarkable and curious way from the surfaces of the stumps. It was difficult to see or imagine where the blossom could have been. In addition to the fruit, the stumps developed fresh fruit- and growth-buds. Altogether a most satisfactory result. Your correspondent's description of the Apple, if I may say so, hardly does it justice. It is a handsome fruit and its colour is predominantly red. Dr. Hogg describes it as "brownish-red, streaked with brighter red on the side next the sun." He also classes it as large. The Cornish Gilliflower is, I believe, considered a shy bearer; can this old superstition about the pruning be in any way responsible? *R. R. H. Moore, Painswick Lodge, Cheltenham.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 29.—There was quite a bright show in the Royal Horticultural Hall, Westminster, on this date, when the Society held its customary fortnightly meeting. Chrysanthemums were the principal floral feature, and these flowers were shown in quantity and of very good quality. There was also a very attractive group of winter-flowering Begonias, and Carnations were displayed in the accustomed quantity. Several collections of Orchids, a handsome display of Apples, various garden sundries and collections of paintings and drawings of flowers and garden scenes all helped to fill the hall. The weather was wet and dismal, and consequently the attendance was rather small.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. C. J. Lucas, Mr. Frederick J. Hanbury, Mr. Sidney Flory, Mr. Fred. K. Sander, Mr. J. E. Shill, Mr. H. G. Alexander, Mr. John C. Cowan, Mr. T. Armstrong, Mr. A. McBean, Mr. E. R. Ashton, Mr. J. Wilson Potter, and Mr. Charles H. Curtis.

First-Class Certificates.

Miltonia William Pitt, Dell Park variety.—A wonderful Orchid. The large flowers are of rich and bright velvety-crimson colour, while the white-edged, scalloped mask is of brownish hue, with crimson radiations extending into the white area. This is an outstanding variety of a splendid hybrid. Shown by Baron Bruno Schröder (gr. Mr. Shill), Dell Park, Englefield Green.

Calanthe Hexham Lad var. Richard (*Burfordiense* × *Angela*).—A brilliant variety with bold flowers. There are two white or pale rose marks at the base of the crimson lip, and the spreading sepals are deep rose-red, while the petals are ruby-crimson. A most attractive Calanthe. Shown by Clive Cookson, Esq. (gr. Mr. Stables), Nether Warden, Hexham.

Awards of Merit.

Calanthe Hexham Gem (*var.* 4.*B.*) (*Angela* × *Bryan*).—A pretty hybrid with pure white lip, sepals and petals, and deep crimson blotch at the extreme base of the lip. A lovely Calanthe. Unfortunately a varietal name was not given to this seedling. Shown by Clive Cookson, Esq.

Cymbidium Lucaste (*grandiflorum* × *Warbler*).—A pleasing hybrid with a large, greenish-white, brown-spotted lip that betrays its descent from C. grandiflorum. The sepals and petals are clear, pale ivory-green. Shown by W. J. Burstow, Esq., Old Quarry, Haywards Heath, Sussex.

Odontioda Pierre Loti (*Coronation* × *Royal Gem*).—In this pleasing hybrid the broad, rounded flowers are rosy-mauve, with wide, deep rose margins to the petals, and narrow rose margins to the sepals. Both sepals and petals have several deep rose-red spots of various sizes. The lip carries one rose-red spot and the disk is yellow. The plant shown carried a spike of eight fine flowers. Shown by J. J. Bolton, Esq. (gr. Mr. Lyne), Claygate Lodge, Claygate.

Groups.

Clive Cookson, Esq. (gr. Mr. Stables), Nether Warden, Hexham, showed a series of interesting Calanthe hybrids, principally derived from crossing C. Angela with C. Bryan. One was pure white with a crimson mark at the extreme base of the lip, while another variety had brilliant ruby-crimson colouring; between these there were many gradations of shade and colour. A special vote of thanks was accorded.

Some lovely Odontoglossums and Odontiodas were shown by Messrs. Charlesworth and Co., together with Laelio-Cattleya Istria, the fine Cattleya Wolsteriana, Miltonia Hyeana with six flowers; Brasso-Cattleya Massangeana and numerous Cypripediums. A small group submitted by Mr. Harry Dixon included Cypripedium insigne Sanderae, Cymbidium Doreen, C. erythrostylum var. Winnianum, Masdevallia tovarensis and several Odontiodas and Odontoglossums.

Messrs. Sanders' group included numerous examples of Vanda coerulea, a specimen of the rare V. Kimballiana, Odontoglossum grande in fine form, Cymbidium Caer Brito, Cypripedium Our Prince—very fine—C. Merope, C. Minotaur and Odontoglossum Isabel. This was a capital display for the time of year. Laelio-Cattleya Purple King and L.-C. Schröderae, the latter carrying a six-flowered spike, were shown by Messrs. Armstrong and Brown.

Messrs. Stuart Low and Co. had a very bright exhibit containing Laelio-Cattleya Nella, L.-C. Luminosa aurea, Sophro-Cattleya Pearl, S.-C. Queen Empress, the fine old Dendrobium thrysiflorum, the curious, pendulous Cymbidium elegans, Odontioda brugensis, Lycaste Tunstallii, and several good Cypripediums. Laelio-Cattleya Senator, L.-C. H. T. Pitt, L.-C. Edzell and such bold Cypripediums as C. Bisham in variety, C. Atlantis, C. Ardestrie and C. Cardinal Mercier were shown by Messrs. Black and Flory.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mrs. Ethel M. Wightman, Lady Beatrix Stanley, Mr. H. J. Jones, Mr. J. M. Bridgeford, Mr. M. C. Allwood, Mr. James B. Riding, Mr. R. Findlay, Mr. W. B. Gingell, Mr. J. T. West, Mr. D. B. Crane, Mrs. Helen L. Smith, Mr. Charles E. Pearson, Mr. G. W. Leak, Mr. E. R. Janes, Mr. D. Ingamells and Mr. W. D. Cartwright (Secretary).

Section B.—Mr. Gerald E. Loder (in the chair), Mr. W. J. Bean, Mr. E. A. Bowles, Mr. G. Reuthe, Mr. C. Williams, Mr. Charles T. Musgrave, Sir William Lawrence, Bt., Mr. R. C. Notcutt, Mr. F. G. Preston, Mr. E. H. Wilding, Mr. W. B. Cranfield, Mr. L. R. Russell, Mr. Mark Fenwick, Mr. T. Hay, Mr. C. J. Lucas and Mr. N. K. Gould (Secretary).

Awards of Merit.

Carnation Canadian Pink.—A well-formed flower, borne on long, erect stalks and of more than average size. The substantial petals are lightly serrated. The colour is a glowing light pink.

Carnation Wivelsfield Claret Improved.—As the name suggests, this is an improved form of the well-known variety. The flowers are larger and of brighter colouring than those of the older variety. Both were shown by Messrs. Allwood Bros.

Carnation Melchet Beauty.—This Fancy Carnation has been shown frequently of late, and in consistently good form. The flowers are large and fragrant, and the substantial petals are fringed. The colour is dull chocolate, striped with lines of deep vermilion. Shown by Messrs. Stuart Low and Co.

Chrysanthemum Gaiety.—A splendid Single of enlarged Mensa type. The ray florets are of rich crimson-chestnut colour, and the flowers have a narrow golden zone and a small disk. Shown by Mr. H. Shoesmith, junr.

Chrysanthemum Mrs. E. Page.—This is a delicately beautiful Single of rather more than medium size. There are several rows of golden yellow florets which are shaded with chestnut towards their tips. Shown by Mr. H. Woolman.

Chrysanthemum Tom Abbott.—A magnificent Japanese variety of the best exhibition size and form. The flowers measure fully eight inches across and are equally as deep. The broad, pointed florets are of bright canary-yellow colour. A few of the older florets at the base of the flower are lightly stained with peach-pink. Shown by Mr. H. J. Jones.

Cultural Commendation.

Protea mellifera.—A very good specimen of the Honey-bearing Protea was shown. By some means this robust, erect shrub, many years ago received the specific name of repens, but the obvious misnomer was corrected long since. The illustration in the *Botanical Magazine*,

t. 346, dated October 1, 1796, gives an excellent impression of the stout stem, narrow, sage-green leaves, and large, terminal flower with its fleshy, rose-tipped, greenish scales which enclose the florets. Shown by Sir William Lawrence, Bt., Burford, Dorking.

Groups.

Chrysanthemums occupied the major portion of the space devoted to the exhibits of plants and flowers. At the end of the hall Messrs. Sutton and Sons arranged a large collection of plants most attractively on a mossy bank. These plants were from seeds sown during February of this year. They illustrated their "Autumn Mixed," "Round-petalled," "Dwarf Mixed," and "Star" types. As may be expected, the flowers were almost solely of the Single section of Chrysanthemums, though the Dwarf Mixed strain yielded a few semi-doubles. This large collection made a very attractive display, and fully illustrated the usefulness of seedling Chrysanthemums for general decorative purposes.

On the tabling, Messrs. Keith Luxford and Co. set up a very fine collection of cut Chrysanthemums. There were several good seedlings of the exhibition Japanese type, and the named sorts included Thos. W. Pockett, pink; Andania, bright chestnut; Geraldine, golden buff; and Louisa Pockett, white. Amongst the many Singles we especially noted Challenger, red-terra-cotta; Mrs. J. Barrell, golden-yellow shading to terra-cotta; Chestnut Glory, pale golden-chestnut; and Pink Beauty. There was also a large vase of attractive Anemone-centred seedlings.

A valuable collection of cut Chrysanthemums of first-rate market type was arranged by Mr. A. G. Vinten. The Japanese varieties included Enton Beauty, rich crimson; Miss Ada Booker, bright chestnut; Balcombe Beauty, glowing yellow; Mrs. S. Dove, pink, and Ivy Gay, blush-pink. The chief Singles were Bridgwater, Absolute, Crimson Dawn, Balcombe Gem and Phyllis Cooper.

In their collection of Chrysanthemums, Messrs. W. Wells and Co. had good vases of Wm. Rigby, yellow; Majestic, light chestnut; Queen Mary, white, and Helena Margerison, of the exhibition Japanese varieties, and they also staged useful Singles.

A very tastefully-arranged group of winter-flowering Begonias was exhibited by Baron Bruno Schröder (gr. Mr. E. J. Henderson), Dell Park, Englefield Green. In the centre there was a large basket filled with plants of the bronze-leaved Mrs. J. Petersen, while hanging baskets contained equally good plants of Mrs. Leopold de Rothschild. Along the back there was a quantity of Gloire de Lorraine, and in the foreground groups of Elatior of glowing colour, and of Exquisite. Mr. Arthur Shambrook displayed an excellent collection of greenhouse Cyclamens in many colours. The plants were of useful, decorative size and the large flowers retained the charm of perfect shape.

Carnations were shown in very good quality by several growers, and by H. C. Walrond, Esq. (gr. Mr. D. Mitchell), Burton Grange, Cheshunt, who had highly creditable vases of Topsy, Laddie, Red Laddie and Maine Sunshine. In their collection, Messrs. Allwood Bros. gave prominence to the varieties Maud Allwood and Cattleya Mauve, which received Awards of Merit at the previous meeting. They also had attractive vases of Topsy, Red Laddie and other older varieties. In another part of the hall Messrs. Allwood Bros. made a pretty "garden" of Dianthus Allwoodii varieties. The plants which had evidently been grown under cool conditions, were very sturdy, and bore plenty of attractive flowers. The recent varieties included an improved Barbara of dark ruby shade; Tony, velvety crimson; Pat, deep rose-pink, and Molly, purple with deep crimson-lake bars.

In their collection of Carnations, Messrs. C. Engelmann, Ltd., staged bright vases of Laddie, Red Laddie, Maine Sunshine, Rouge, Dorcas, Saffron and other sorts, while Messrs. Stuart Low and Co. had good vases of the richly coloured Master Michael Stoop, Philip Sassoon, Brilliant and Spectrum.

In a floor group by the gallery, Messrs. L. R. Russell, Ltd., showed berried and foliage shrubs, including Skimmia japonica, Eurya latifolia variegata, Griselinia macrophylla variegata and several varieties of Euonymus. On the tabling, Messrs. Wm. Wood and Son had well-fruited examples of Skimmia japonica, Cotoneaster frigida Vicarii and Pernettya mucronata varieties, with Berberises and other shrubs. Mr. John Klinkert showed good topiary specimens in evergreen Box.

A pleasant little rock garden was made by Mr. F. G. Wood, in which he displayed dwarf Conifers, including compact, little specimens of the golden-tipped Cupressus plumosa nana compressa. The Misses Hopkins also had a small rock garden.

Many vases of sweet Violets were shown by Mr. J. J. Kettle and Mr. Baldwin Pinney. The chief variety was Princess Mary, which was represented by many very good flowers.

There were various exhibits of garden sundries, including a motor-driven Atco lawn-mower, garden tools from Mr. Richard Melhuish, Winter-washes shown by the Briton Ferry Chemical Co., the Chase Alpine Plant Protectors, the "Legilab" and "Helichrysa" plant labels, Radium Fertiliser, the Rolcut Secateur and the Ideal Britannia boiler.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair), Mr. Joseph Cheal, Mr. P. C. M. Veitch, Mr. George F. Tinley, Mr. A. W. Metcalfe, Mr. A. Bullock, Mr. J. Wilson, Mr. F. Jordan, Mr. H. Prince, Mr. A. Poupart, Mr. W. H. Divers, Mr. E. A. Bunyard, Mr. E. Beckett, Mr. H. V. Taylor and Mr. A. N. Rawes (Secretary).

Groups.

A wonderful collection of Apples interspersed with dishes of Pears and bunches of well-grown Grapes, exhibited by the Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. E. Beckett), was the centre of attraction for fruit enthusiasts. The exhibit consisted of some 140 dishes, arranged and staged with Mr. E. Beckett's usual skill, and with the fruits set off by discreetly placed ornamental plants and berries, made a most attractive display. The bright colouring of the Apples was enhanced by the artificial lighting in the hall. The bunches of Grapes, of the varieties Muscat of Alexandria, Cooper's Black, Gros Maroc, Appley Towers, Alnwick Seedling and Alicante appeared particularly fine for the time of the year. Many of the Apples exhibited were varieties seldom met with by the average grower and added interest to the collection. There were fine specimens of the old Rymer Pippin Apple and of Crawley Pippin, Pomeroy, Broad Eye Pippin, Buzzar and Black Prince. The most highly coloured Apples noted were Newton Wonder, Cox's Orange Pippin, Emperor Alexander, James Grieve, Gascoyne's Scarlet, Paroquet, Forge and the old Duchess's Favourite. All were of high exhibition quality. The notable Pears were Catillac, Josephine de Malines, Beurré de Jonghe and the little grown Dr. Frouceau. Altogether, this exhibit compared very favourably with any similar exhibit—and was more tastefully staged than most—of recent years.

Other Exhibits.

The Committee considered a seedling Apple received from Mr. A. C. Batchelor, 14, Southern Avenue, Leigh-on-Sea. This was a medium-sized, highly-coloured fruit, something after the style of the old Barnack Beauty. It was no advance upon existing varieties.

Mr. W. H. Divers, V.M.H., of Westdean, Hook, Surbiton, brought two Apples for comparison—King of the Pippins and Golden Winter Pearmain. Mr. Divers explained that these two Apples are mixed in the trade, being generally known under the name of King of the Pippins. The broad, open eye of Golden Winter Pearmain serves to distinguish that variety from the true King of the Pippins, the eye of which is smaller and nearly closed. It was also pointed out that the King of the Pippins described by Hogg is not the variety now grown under that name.

HITCHIN CHRYSANTHEMUM.

The twenty-fifth annual exhibition of Chrysanthemums, fruit and vegetables was held at the Town Hall, on Thursday, November 10. The day was fine, and during the afternoon there was a record attendance.

The number of entries reached the grand total of 370, which was sixty more than last year. In all classes the exhibits were of excellent quality, and particularly so in the classes for vegetables and fruits. The large blooms and Chrysanthemums were not quite up to the standard of previous years, but the display, on the whole, was considered good for the season. Table decorations were a feature of the show, and here Mrs. W. G. P. Clark, wife of the Secretary, won the first prize with the Chrysanthemum Flavia, and her daughter the second prize with Red Dragon.

A new class was provided for an arrangement on a given space, with no restriction as to the number of flowers so long as they represented not fewer than four different types of Chrysanthemums. There were two competitors, and the Silver Cup was awarded to E. Martin Smith, Esq. (gr. Mr. Miller), while Mr. W. G. P. Clark was second.

The principal class was for six vases of Japanese, blooms, distinct, three blooms of one variety in each vase. There were three competitors, and the Silver Challenge Cup was awarded to the Marquis of Salisbury, Hatfield (gr. Mr. R. W. Hall), for fine specimens of Mrs. A. W. Holden, Mrs. B. Carpenter, Wm. Rigby and others; second, Mrs. Hanscombe, Pirton Hall (gr. Mr. Wm. Sherriffs); third, Sir Henry Whitehead (gr. Mr. C. Carter); in this third prize exhibit a fine R. C. Pulling was the best bloom in the show,

For four vases of Japanese varieties, three blooms of each, another Silver Cup was offered as first prize, and this was won by R. O. Oldham, Esq. (gr. Mr. J. F. Kellaway). For six Japanese blooms, distinct, E. Martin Smith, Esq., led and the Marquis of Salisbury was placed second. The first-prize-winner in this class was also first for six Single Chrysanthemums, and for six Decorative varieties, while for three white Japanese blooms the Marquis of Salisbury led, and was awarded first prize for a large vase of Japanese blooms, arranged with foliage. Sir Henry Whitehead was placed first for three coloured blooms.

Fruits were well shown, and the Challenge Cup was won by Major J. F. Harrison (gr. Mr. A. J. Hartless), with a collection which included Grapes, Melons, Apples and Pears. Mrs. Carl Holmes, The Node, Welwyn (gr. Mr. Penton), showed the best collection of Apples, and also led for three dishes of Pears. The first prize Muscat of Alexandria Grapes came from E. Martin Smith, Esq., while Sir Henry Whitehead was first for black Grapes.

In the special class provided by Messrs. James Carter and Co., for a collection of nine kinds of vegetables, there were three keen competitors. Major Harrison won the Challenge Cup for the third time in succession and it now becomes his property; second Sir Henry Whitehead; third, E. Martin Smith, Esq.

Major Harrison also won the leading award offered for a collection of vegetables by Messrs. Sutton and Sons, second and third positions falling to the same competitors as in the above class.

Mrs. Carl Holmes was awarded first prize for Potatos, for Leeks, and for Parsnips, while Major Harrison and E. Martin Smith, Esq., were equally successful exhibitors in other single dish classes of vegetables. The most successful exhibitors in the amateur and single-handed gardeners' classes were Messrs. B. Franklin, W. G. Willmott, and W. G. P. Clark, for flowers; and Mr. W. Muddle and Mr. J. Spriggs, for vegetables.

Messrs. Keith Luxford and Co. arranged a bold display of Chrysanthemums which was greatly appreciated by the Society and admired by the visitors.

SALISBURY AND DISTRICT GARDENERS'.

This Society, one of the largest and most enthusiastic bodies of gardeners in south-west England, recently celebrated its twenty-first birthday. Mr. W. F. Gullick, Salisbury, has filled the office of Secretary during the whole period.

Fortunately, lectures are a feature, and on Wednesday, November 23, the large room at the White Hart Hotel was crowded with an appreciative audience to hear Miss Barbara Gullick, B.Sc., deliver a lecture on "Some Notes on British Wild Flowers." Miss Gullick, who is a very clever British botanist, took her listeners in thought to various parts of the British Isles, Wiltshire and the Downs in particular, which she has explored most minutely, in her search for rare and uncommon wild plants. The terms "Casuals," "Colonists," and "Aliens," were explained in a most interesting manner, and she urged the audience to do all they could to preserve the flora of the British Isles, which is one of the most varied and beautiful in the world.

At the close of the lecture questions were answered by Miss Gullick. On the proposal of Miss E. J. Hardy, who mentioned how indebted the Society was to Miss Gullick for her fascinating lecture, seconded by Mrs. A. E. Davis, a very hearty vote of thanks was accorded the lecturer. Mr. A. C. Jonas, who has been Vice-President of the Society since its inauguration, occupied the chair.

Splendid exhibits of Cypripediums from Mr. W. Asher, Cyclamens from Mr. A. J. Hooper, and a magnificent collection of Chrysanthemums from Mr Robert Bush, grower to Mr. Gullick, were on view. The quality of the plants in each instance was so good that a Certificate of Merit was unanimously voted to the respective growers.

READING AND DISTRICT GARDENERS'.

"Tuberous Begonias from Seeds and Tubers," was the subject of a lecture delivered in a most practical manner before a large attendance of members at the fortnightly meeting held on Monday, November 21, at the Abbey Hall, by Mr. J. Wynn, The Gardens, Hammonds, Checkenden. The lecturer referred to the double Begonia as a good plant for flowering in the greenhouse during the summer. Although there were various types, double Begonias were his favourites and the only kind grown at Hammonds. After giving many interesting facts regarding the development of the Begonia, Mr. Wynn dealt with cultivation, both from seeds and tubers; composts, watering, temperatures, manuring, etc., and concluded with reference to the Begonia mite.

A lengthy and animated discussion followed, sustained by Messrs. Gower, Townsend, Young, Cook, Beaumont, Carpenter, Reeves, Cox, Howlett and Waite. At the conclusion, a hearty vote of thanks was accorded to the lecturer. A feature of the meeting was the wonderful display of Apples in the competition for three dishes of Apples, three distinct varieties (two culinary and one dessert), no fewer than seventeen lots being staged—a record number of entries in any competition held by the Association. The fruits were in perfect condition, of good quality and excellent in colour, and the judges had great difficulty in selecting the finest set. The awards were as follow: First, Mr. A. W. Gower, The Gardens, Calcot Grange; second, Mr. T. Butcher, The Gardens, Glebelands, Wokingham; third, Mr. C. W. Wright, The Gardens, Beenham Lodge, Beenham. In a class for three dishes of Pears, the first prize was awarded to Mr. F. G. Rabbetts, The Gardens, Bulmershe Court, Reading, and the third to Mr. J. Wynn.

In the non-competitive section, a First-Class Certificate was awarded to Mr. W. Broomfield, The Gardens, Cliffe House, Mapledurham, for a beautiful plant of Odontoglossum Plumptonense. Mr. C. J. Howlett, The Mews, Earley, showed ten dishes of well-coloured Apples; Mr. F. G. Rabbetts sent three vases of Roses cut from the open; Mr. H. Wade, The Gardens, Mortimer House, showed Tomatos; and Mr. G. Burchell, Earley, Potatos.

DUNDEE HORTICULTURAL.

The November meeting of the Dundee Horticultural Society was held in the Training College, Park Place, Dundee, when the lecturer for the evening was Mr. W. A. Crighton, C.C.H. (Edin.), of Messrs. Storrie and Storrie, Glencarse Nurseries. Mr. Crighton chose for his subject "Fruit Culture under Glass in Pots," and discussed the advantages of growing fruits in pots under glass as against planting out in borders. He emphasised the fact that later varieties of Apples and Pears which could not be grown successfully out-of-doors in Scotland, could be grown indoors to a perfection beyond the comprehension of many cultivators. Fruits grown in this way were never at the mercy of the very erratic climate which prevails, and the quality was as good as that produced in the south of England. On the motion of Mr. Robert Stewart, the lecturer was accorded a very hearty vote of thanks. Mr. Martin Taylor showed a very fine specimen plant of Begonia Gloire de Lorraine, which was awarded a Cultural Certificate.

GUILDFORD AND DISTRICT GARDENERS'.

The annual meeting of this Association was held on Thursday, November 10. There was a very good attendance, when Mr. Alderman W. T. Patrick, J.P., the President, opened the proceedings by submitting the report of the Committee and Statement of Accounts. Mr. Patrick's review was very encouraging. He congratulated the Association on the success which had attended the activities of each subcommittee, and expressed the opinion that but few provincial horticultural societies could present such a satisfactory statement. Thanks were tendered to the many friends and associates by whose help the summer show had been made so great a success, special mention being made of Lieut. Imms and Mr. Kinggett in this connection, and to Mr. Norman Nation, the Hon. Treasurer, Mr. E. Sawyer, the Hon. General Secretary, and Mr. Childs, for his painstaking work in arranging the lectures and visits to gardens in the district.

Dealing with finance, the report showed credit balances of £23 3s. 8d. in the show account; £5 3s. 3d. in the lecture and outing accounts; and £12 9s. 9d. in the Trading account. The monthly journal account was the only one showing a deficiency—£76 4s. 1d. But a set-off against this is the service rendered to the Association by the free distribution to members of this monthly publication. The *Journal* gives all information and announcements of the various activities, thereby saving the monthly printing and posting of circulars to over a thousand addresses. The general account showed a balance in hand of £49 0s. 1d. at the close of the year.

Mr. Patrick, Mr. Norman Nation and Mr. E. Sawyer were re-elected to the respective offices of President, Hon. Treasurer and Hon. General Secretary, while Mr. W. F. Binfield, Mr. A. Blake, Mr. G. Earl, Mr. King, Mr. J. A. Kirkwood, Mr. H. J. Blunden, Mr. T. Newman, Mr. A. E. Tylecote, Mr. G. T. Watson, Mr. O. Wells, Mr. T. Williams and Mr. A. H. White were appointed to serve on the Committee.

The date of the next summer show has been fixed for Wednesday, July 11, 1928.

For the first lecture of the season, the Association was favoured with a visit by Mr. Lavender, of Messrs. J. Carter and Co., Raynes Park, who gave an address on "Rhododendrons." The topic was treated in an interesting and exhaustive manner, and it was claimed that from a garden point of view Rhododendrons (which now embrace all plants known as Azaleas, including Azalea mollis), include some of the most beautiful and ornamental plants grown. They have the advantage of being, for the most part, presentable evergreen plants, and among the best flowering plants, combining handsome foliage, profusion and beauty of flower, and, in many cases, delicious fragrance. By a careful selection of species and varieties the flowering season may be spread over the greater part of the year. Mr. Lavender stated that the Rhododendron was introduced into England in 1763, but it is within the last half-century that the family has attained its present popularity. He went on to discuss the natural distribution and habit of the plant, methods of cultivation, propagation by seeds, cuttings, layers and grafting, and followed this with information concerning the most suitable sorts to grow, making it clear that in small gardens, and in pots, much greater use might be made of these subjects. While a peaty soil was ideal, it was not an actual necessity, as Rhododendrons will thrive in a well-drained, light, sandy loam, rich in humus, but lacking in lime. An annual top-dressing of about three inches of rotten leaves in spring was recommended to provide cool shelter for the roots.

Mr. Patrick, the President, heartily thanked Mr. Lavender for his lecture.

A few members brought exhibits from their gardens—a collection of vegetables, a bowl of Roses and several plates of Apples—and these were sold for the benefit of the funds of the Association.

CORBRIDGE-ON-TYNE CHRYSANTHEMUM.

The twenty-fourth annual exhibition was held in the Town Hall, Corbridge-on-Tyne, on November 19. There was a grand display of cut flowers and a very keen competition. In addition to the floral displays some remarkable collections of vegetables were exhibited and proved an attractive feature in a district where vegetables are extensively grown, especially by amateurs, for the local shows.

In the class for four varieties of Japanese Chrysanthemums, in four vases, the Dowager Lady Allendale (gr. Mr. J. Thomas), Bywell Hall, was placed first with grand blooms of Majestic, Mrs. R. C. Pulling, Francis Jolliffe and Lord Stewart; second, J. C. Straker, Esq. (gr. Mr. A. Hay), Stagshaw House, with Golden Champion, Mrs. Algernon Davis, Majestic and Francis Jolliffe; third, J. Dove, Esq. (gr. Mr. L. Sharp), Oaklands, Riding Mill. For six Japanese blooms, in not fewer than two varieties, S. E. Tulley, Esq. (gr. Mr. Macombie), Newton Hall, Stocksfield, led with very fine examples of Queen Mary, Princess Mary and Majestic; second, the Dowager Lady Allendale, with Francis Jolliffe and Mrs. T. W. Pockett. In the class for three Japanese blooms, in not fewer than two varieties, S. E. Tulley, Esq., was again placed first; and A. F. Ridley, Esq. (gr. Mr. W. Clayton), Park End, Wark, second.

For three white Japanese blooms, one variety, Lady Allendale led with Cissie Brunton in very fine condition. For three blooms of a yellow Japanese variety, S. E. Tulley, Esq., scored with remarkably fine blooms of Mrs. R. C. Pulling; second, Lady Allendale. The last-named competitor took the lead for three pink Japanese blooms with Mrs. B. Carpenter; A. F. Ridley, Esq., second; J. C. Straker, Esq., third. The best three bronze Japanese blooms came from S. E. Tulley, Esq.; second, Lady Allendale; third, J. C. Straker, Esq. Lady Allendale also showed the best three crimson Japanese blooms, exhibiting Mrs. G. Monro; A. F. Ridley, Esq., second; J. C. Straker, Esq., third. For four vases of single Chrysanthemums, disbudded, T. D. Straker-Smith, Esq. (gr. Mr. J. Winder), Howden Dene, won first prize, his Susan and Bronze Molly being very fine; second, J. C. Straker, Esq.; third, Lady Allendale. For two vases of Single-flowered Chrysanthemums, disbudded, J. C. Straker, Esq., won first prize; T. D. Straker-Smith, Esq., second; S. E. Tulley, Esq., third.

Decorative varieties were extensively shown and competition was keen in the various classes.

Lady Allendale had the best collection of six kinds of hardy vegetables, and T. D. Straker-Smith, Esq., obtained the second prize.

In the hardy fruit classes, especially Apples, there was a very good competition.

Obituary.

William Ardnahu Leslie.—We regret to record the death, which occurred suddenly on Tuesday, October 18, of Mr. William Ardnahu Leslie. He died at Corniston, where he had been gardener for forty-nine years. Mr. Leslie was well-known in gardening circles and was a regular contributor to the horticultural press. He was an accomplished photographer, and his articles were rendered the more interesting by his fine illustrations of flowers and plants. He served his apprenticeship as a seedsman with the late Mr. Thomson of Glasgow. Mr. Leslie was an exceptionally capable man in many ways, being an expert electrician and having a practical knowledge of architecture and draughtsmanship. Just before his death he was engaged in the erection of extensive glasshouses for the cultivation of Tomatos, at Symington, to be called The Ardnahu Nursery. This will be conducted by his widow, to whom, and to her two sons and two daughters, our sympathy is extended.

THE LATE W. A. LESLIE.

ANSWERS TO CORRESPONDENTS.

Clover on Lawn.—*Anticlover.* It is not surprising that 10 cwt. of a chemical manure made the grass look sick. The lawn is slightly less than half-an-acre in extent, and the application was at the rate of a little over a ton to the acre of the chemical manure. The injurious part of it must have been nitrate of soda or sulphate of ammonia. An application of 6½ cwt. would have been ample. To avoid the encouragement of Clover, it should be stipulated that no basic slag should be put in any mixture of chemical manures used. Much of the Clover may be raked out, if you first cut the patches one way and then the other, rather closely, with an edging iron. Cut shallowly to avoid cutting too deeply into the turf; most of the stems of creeping Clover are on the surface. After careful raking with an iron rake having close teeth, little of the Clover should be left. A sprinkling of lawn sand or sulphate of ammonia, once a fortnight, will gradually sicken the Clover. The worst of the patches of Pearlwort should be cut out and good turf substituted. No mention is made of the use of lime on the lawn. A dressing of sifted loam and leaf-mould to which some lime has been added would benefit grass on a sandy subsoil. Ground chalk would be the best form to use. Whether the sea sand consists of finely broken shells or stone, we do not see that it could benefit grass on a light soil. There is lime in shell sand, but it is very slowly available to the grass roots.

Grape for Identification.—*W. H.* We fail to recognise the Grape; it is a late variety, very thick-skinned and of moderate flavour. If you send a bunch next year, with wood and leaves attached, we might possibly help you. The withering of the stems is caused by shanking, which dries up the stalks of the bunches and berries of the Grapes. Sometimes only a few berries shank, at other times the whole bunch. Shanking is the result of some strain, such as overcropping, destruction of foliage by red spider, checks and chills, the roots getting into cold subsoil, the borders becoming sour, and excessive dryness at the roots. It is very difficult to trace the cause of shanking, or to apply a remedy, but if the above evils are avoided you will not be troubled.

Lifting and Replanting Vines.—*W. T.* It would be quite possible to lift vines twenty-two years old, in inside and outside borders, and transfer them to a new site, but this would entail expense, and either the outside or inside roots would have to be sacrificed. The vines would need shading until the roots had entered into the new soil, and frequent overhead syringings in the morning and afternoon would be necessary until the vines had made fresh growth. Much the cheapest and best course would be to plant young vines in the new house, as these would bear fruit so soon as the old and probably exhausted vines would, and they would continue to improve yearly until they filled the house, four or five years hence. If young, established, planting canes are bought from a nurseryman who specialises in their production, they could be planted in early spring, while home-grown green vines could be planted so late as May with every chance of success.

Names of Fruits.—*B. E.* 1, and 3, decayed; 2, Beurré Capiaumont; 4, Gansel's Bergamot. *J. L.* New Bess Pool.—*C. E.* 1, Mère de Ménage; 2, Pile's Russet; 3, Winter Greening; 4, not recognised; probably a local variety.—*H. A. S. S.* Gascoyne's Scarlet.—*F. T.* Probably Monarch.—*Altho.* 1, Emperor Alexander; 2, Fearn's Pippin; 3, Cox's Orange Pippin.

Names of Plants.—*D. G. L.* Ceanothus dentatus.—*E. S.* 1, Veronica salicifolia; 2, V. speciosa var.; 3, V. s. var. purpurea; 4, V. s. var. alba; 5, V. s. coerulea; 6, V. s. var. atropurpurea.—*D. C.* Your plant is Rhus Toxicodendron, the Poison Ivy, which is occasionally, but erroneously catalogued as Ampelopsis japonica.—*D. McK. S.* Cotoneaster Henryana.—*J. B.* Cupressus obtusa.—*S. D.* Senecio Grayii.—*A. H. L.* Rhamnus catharticus (Buckthorn).—*C. B.* 1, Stachys lanata; 2, Senecio tanguticus; 3, Saxifraga crassifolia; 4, Lobelia fulgens variety; 5, Solidago canadensis.—*A. J. D.* 1, Berberis vulgaris var. purpurea; 2, Cotoneaster frigida; 3, Euonymus latifolius; 4, Pyracantha coccinea var. Lalandei.—*S. P. S.* Crataegus orientalis var. sanguinea.—*H. C. D.* Cupressus Lawsoniana var. juniperina.—*Benge.* Billbergai nutans; this plant will succeed in a dwelling room.—*T. P.* The specimens were very scrappy and it was impossible to identify them properly in this condition. 1, Primula Auricula variety; 2, Veronica incana (?); 3, Erigeron species; 4, Cistus species; 5, Iberis species; 6, and 7, Helianthemum species; 8 and 11, too scrappy to identify; 9, Cerastium Biebersteinii; 10, Saxifraga canaliculata; 12, Helleborus foetidus.—*C. S. C.* 1, Cyclamen europaeum; 2, Salvia farinacea.

Neighbour's Claim of Land.—*J. A.* The mere fact of leaving eighteen inches of land beyond the ditch would not, of itself, deprive your employer of the ownership of such strip of land, but difficulties might arise hereafter, as the adjoining owner might acquire title by possession. It would be better to adopt the usual course of cutting the ditch to the extremity of the land.

Communications Received.—A. T. H.—W. L. S.—C. H.—W. L.—G. F.—F. G.—J. W. M.—H. B. W.—J. E. G. W.—W. A.—J. C.—H. M.—F. J. H.—J. P.—R. W. R.

NEW HORTICULTURAL INVENTIONS.

These particulars of New Patents of interest to readers, have been selected from the Official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

Latest Patent Applications.

30,215.—Dickinson, Ltd., A. J.—Manufacture of insecticides. November 7.

29,980.—Bubbeldan, P.—Potato-planting machines. November 9.

29,694.—Fowler, C. H.—Manually-controlled land rollers. November 7.

30,246.—Pickard, E. E.—Method of operating ventilating-panes of glasshouses, etc. November 11.

29,869.—Toter, R.—Preparation for prevention of Onion maggot, wire worm, etc. November 5.

Specifications Published.

280,009.—Fowler and Co. (Leeds), Ltd., J., and Fowler, C. H.—Power cultivation of land.

280,012.—Hampson, J.—Agricultural and other implements.

276,950.—Bacle, P.—Machines for planting vegetables.

280,127.—Blake, P. G.—Fastening-means for the cross wires of wire fencing or the like.

251,285.—Wendler, A.—Process for increasing the yield of the soil for growing plants and fruits.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2., at the uniform price of 1s. each.

Abstract Published.

Garden Roller.—Patent No. 277,904.

A new type of roller which should find favour among gardeners and other users, especially so for use on tennis and like lawns, owing to its heaviness, is the recent patent of Messrs. S. A. Scoffin, H. E. Willmott, G. C. Wood and Scoffin and Willmott, Ltd., of Lansdowne Road, Leytonstone. It comprises two or more cylinders of concrete or similar material provided with outer metal casings which act as protective coverings and also as moulds for moulding the concrete, etc.; the outer edges of the roller are rounded or formed with obtuse angles to prevent damage to the surfaces rolled, etc. The outer sides of the metal casings may be rounded off or bent over, but shaped metal rings may be attached to them or to the concrete, or the concrete may be shaped and made to project beyond the edges of the casings. The concrete may fill the casings wholly or partially. The inner edges may be strengthened by metal casings, inwards, at a right-angle. Bearings for the axle are provided with flanges or projections and embedded in the concrete.

THE LATEST TRADE MARKS.

This list of Trade Marks, of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

ORION.

482,047.—Fertilisers.—Synthetic Ammonia and Nitrates, Limited, The Chemical Works, Billingham, Stockton-on-Tees. November 16.

TELLUS.

482,050.—Fertilisers.—Synthetic Ammonia and Nitrates, Limited, The Chemical Works, Billingham, Stockton-on-Tees.—November 16.

BANNER.

483,257.—Fence posts of ordinary metal.—The American Steel and Wire Company of New Jersey, Rockefeller Building, 614, Superior Avenue, Northwest, Cleveland, Ohio, United States of America. November 9.

AGRICIDE.

484,069.—Chemical substances used for agricultural and horticultural purposes.—Agricultural Products, Limited, 39, Victoria Street, London, S.W.1. November 2.

MARKETS.

COVENT GARDEN, Tuesday, November 29th, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–40 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's per doz.— pink... ...	18 0–21 0
—yellow ...	12 0–18 0
—bronze ...	15 0–18 0
—white ...	12 0–18 0
—red	15 0–18 0

	s. d. s. d.
Crotons, doz. ...	30 0–45 0
Cyrtomiums ...	10 0–25 0
Erica gracilis, 48's, per doz.	24 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz. ...	8 0—9 0
—nivalis, 48's, per doz. ...	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety ...	12 0—8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	15 0–18 0
—60's, per doz.	8 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0–12 0
—cuneatum, per doz. bun. ...	8 0—9 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	5 0—7 0
Asparagus plumosus, per bun., long trails, 6's—...	2 0—2 6
—med. sprays	1 6—2 6
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0 2 6
med. „ ...	1 0—1 6
short, „ ...	0 6—1 9
Camellias, white, 12's, 18's per box. ...	2 6—3 0
Carnations, per doz. blooms .	2 6—5 0
Chrysanthemums, per doz. blooms—	
—white ...	4 0—8 0
—yellow ...	4 0—6 0
—pink... ...	4 0—6 0
—bronze ...	4 0—6 0
—red	4 0—6 0
—single varieties	2 6—4 0
—spray, bronze, per doz. bun.	18 0–24 0
—spray, pink, per doz. bun.	24 0–30 0
—spray, yellow, per doz. bun.	18 0–24 0
—spray, white, per doz. bun.	18 0–30 0
—single varieties, spray, per doz. bun.... ...	18 0–30 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	10 0–12 0
Freesia, white, per doz. bun.	5 0—6 0
French flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	4 6—5 0
—Violets, Parma, large, per bun..	4 6—5 0
—Ruscus, green, per pad ...	4 0—5 0
—Solanum fruits, per pad ...	7 0—8 0
—Anemones, mixed, per doz. bun.	5 0—6 0

	s. d. s. d.
French flowers—	
—Ranunculus, carmine, per doz. bun.	6 0—7 0
— — Burbaroux, per doz. bun.	6 0—7 0
— — Romano, per doz. bun.	12 0–15 0
—Roses, Saffrano, per pkt. ...	2 3—2 6
—Marguerite, yellow, per doz. bun. ...	2 6—3 0
—Violets, single, per doz. bun.	3 0—4 0
Gardenias, per doz. blooms .	5 0—6 0
Heather, white, per doz. bun.	— 12 0
Hyacinths, Roman, 6's, per doz. bun.	2 0—2 6
Lilac, white, per doz. sprays...	4 0—6 0
Lilium auratum, per doz. blooms	5 0—6 0
—speciosum album, per bun.	4 6—5 0
—short, per doz.	4 6—5 0
—rubrum, long, per bun ...	3 6—4 6
—short, per doz.	2 0—2 6
—longiflorum, long, per bun.	3 6—4 0
—short, per doz. blooms ...	3 6—4 0
Lily-of-the-Valley, per doz. bun.	24 0–30 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Narcissus Soleil d'Or, per doz. bun.... ...	12 0–15 0
Orchids, per doz.	
—Cattleyas ...	21 0–30 0
—Cypripediums	4 0—6 0
Poinsettias, per doz. blooms...	18 0–24 0
Roses, per doz. blooms—	
—Columbia ...	5 0—7 0
—Richmond ...	4 0—7 0
—Madame Butterfly ...	5 0—8 0
—Golden Ophelia	5 0—6 0
—Roselandia ...	5 0—6 0
—Madame Abel Chatenay ...	3 6—5 0
—Liberty ...	5 0—6 0
—Molly Sharman Crawford ...	3 6—4 6
—Premier ...	5 0—6 0
Smilax, per doz. trails ...	2 6—3 0
Violets, per doz. bun.... ...	2 6—5 0

Remarks.—In this department requirements were very moderate during the past week, with no special demand for any particular subject, with the exception of Roses, of which the supplies have been somewhat shortened by the colder weather, prices are similar to those quoted last week. Amongst Chrysanthemums, Heston White, Mrs. Wilcox and Winter Cheer are most in demand; good disbudded blooms are fairly plentiful at 5s. to 6s. per dozen; small grades are somewhat shorter in supply. The newest lines in this department are some very fine heads of Poinsettias and a few blooms of Iris tingitana. Asparagus plumosus, A. Sprengeri and Maidenhair Fern from home-growers are now receiving more attention. A good supply of Smilax continues to arrive from the Channel Islands. A few boxes of well-berried Holly are now being received from Cornwall. Christmas Trees are also arriving in fairly large quantities, the larger trees being most plentiful at the present time. The first consignment of Mistleto is expected this week.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Newton Wonder	4 0—7 0
—Lane's Prince Albert ...	4 0—7 0
—Bramley's Seedling ...	5 0–10 0
—Other cookers	4 0—5 0
—Cox's Orange Pippin, per case	20 0–40 0
½-sieve ...	6 0–15 0
—Blenheim Pippin, ½-sieve...	3 0—5 0
—Ribston Pippin, ½-sieve ...	3 0—6 0
Apples, American—	
—Newtowns ...	14 0–16 0
—York Imperials, per barrel ...	30 0–35 0
—King David, per case ...	12 0–13 0
—Winter Banana ...	13 0–14 0
—Jonathan ...	14 0–16 0
—Oregon, Newtown Pippin	14 0–14 6
—King's ...	26 0–35 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½-barrel ...	30 0–35 0
—Ribston Pippin, per barrel ...	25 0–30 0
—Russett ...	30 0–35 0
—Blenheim Pippin, per barrel	23 0–25 0

	s. d. s. d.
Bananas ...	18 0–27 6
Grape Fruit—	
—Blue Goose...	27 6–30 0
—Honduras ...	20 0–22 6
—Jamaica, case	20 0–22 6
Grapes, English	
—Alicante ...	1 4—2 6
—Colmar ...	1 6—3 6
—Muscat ...	4 0—7 0
—Canon Hall ...	5 0—7 0
Lemons, Messina, per case ...	18 0–25 0
—boxes ...	8 0–10 0
Nuts—	
—Cobs ...	1 6—1 8
—Walnuts, Grenoble, per bag	9 0–10 6
—Chestnuts, Italian, bag .	20 0–27 6
Oranges, per case—	
—Valencias (Spanish)	18 0–30 0
—Australian Valencia, case	— 15 0
—Cape Valencia	23 0–25 0
Pears—	
—Doyenné du Comice, per doz.	2 0—6 0
Pears, Californian—	
—Beurré D'Anjou	23 0–26 0
—Doyenné du Comice ...	25 0–28 0
—Winter Nelis	22 6–28 0
Pines, case ...	25 0–37 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon ...	7 0—8 0
—Italian ...	2 0—4 0
—Paris Green...	7 0—8 0
Aubergines, per doz.	2 0—3 0
Beans, Madeira, per box ...	2 6—4 0
Beets	4 0—6 0
Brussels Sprouts, ½-bag ...	2 6—3 6
Carrots, per bag	4 0—5 0
Cauliflower, per crate ...	3 0—6 0
Celery (washed), per doz. fans	18 0–30 0
Cucumbers, doz.	16 0–21 0
French Endive, per doz. ...	2 0—3 0
—Batavia, per doz.	2 0—3 0
Guernsey Beans, per lb. ...	1 6—3 6
Leeks, per doz.	2 0—3 0
Lettuce, French, round, per doz.	1 3—2 0
—French, 5 doz. crates ...	3 6—5 0

	s. d. s. d.
Mint, forced, per doz. bun.	4 0—8 0
Mushrooms—	
—Cups ...	2 0—3 0
—Broilers ...	1 6—2 0
Onions—	
—Dutch ...	8 0—9 6
—Spanish ...	13 6–15 0
Parsnips, cwt. .	4 0—5 0
Peas, Guernsey, per lb. ...	1 6—4 0
Potatos—	
—English, cwt.	5 0—8 0
—Guernsey, new, per lb. ...	0 6—0 8
—Azores, case	20 0–25 0
Tomatos, English—New Crop—	
—pink... ...	7 0–10 0
—pink and white	7 0–10 0
—white ...	5 0—6 0
Tomatos, Canary Island ...	18 0–25 0
Turnips, per cwt.	3 6—4 0

Remarks.—Some slight improvement is noticeable in the general demand, although conditions are somewhat slow for the time of year. Imported Apples from the North American Continent are selling fairly well, but the stocks on hand are comparatively small. The English Apple market is still overburdened with large quantities of medium and second-sized fruits, which are difficult to dispose of at any price. Best cooking and dessert Apples are selling at slightly better prices. A few English Doyenné du Comice Pears are available, but in competition with Californian samples they do not shine. Hothouse Grapes have been selling quite freely and remain in good demand. There is a firm demand for good Walnuts and Chestnuts, while the few Cob Nuts available are selling at a high price.

The Cucumber trade is good and prices are firmer. Guernsey Beans are selling better, and good Beans will continue to sell well for some time to come. The weekly shipment of Madeira Beans was heavier, but prices were better. New Potatos from Scilly, Guernsey and the Azores remain in quiet demand. Mushrooms are rather more plentiful, but the prices remain fairly good. The salad trade for the time of year is poor but improvement is expected in this section. Cauliflowers are a quiet section in common with green vegetables. The old Potato trade is firm for the best varieties and grades.

GLASGOW.

An average business was transacted at steady prices in the cut flower market during the past week. Supplies of Chrysanthemums were well maintained and were disposed of as follows:—Ada Brooke, specials, 6s. to 8s per dozen; White Beauty, 5s. to 7s.; Mary Morris and Absolute, 3s. to 3s. 6d.; Sandown Radiance, 2s. 9d. to 3s. 3d.; Duckham, 2s. 6d. to 3s. for 6's; Phyllis Cooper, 1s. 9d to 2s.; White and Yellow Thorpe, 1s. 6d. to 1s. 9d.; Ada Brooke, 2s. to 2s. 3d.; Florrie King, 1s. to 1s. 6d.; Almirante, 1s. to 1s 4d.; Cranford Yellow and Mary Richardson, 10d. to 1s. 3d.; Jean Pattison, 10d. to 1s. 2d.; Pink Chieftain, 1s. 6d. to 2s.; and Dolores, 9d. to 1s. Small bunches of H. W. Thorpe sold at 8d. to 10d., and large at 10d. to 1s. 3d; Carnations were worth 4s. to 4s. 6d. per dozen; pink Roses, dearer, at 6s. to 8s.; white and red, 2s. to 4s.; Narcissi, 3s. to 4s.; and Lilium longiflorum, 2s. 6d. to 3s. 6d. per bunch.

The fruit market was dull, with Apples steady. York Imperials, 28s. to 32s. per barrel; Spys, No. 1, 44s.; Baldwins, 36s.; Starks, 30s.; Kings and Greenings, 44s.; Ben Davis, 25s.; Delicious, fancy, 16s. to 16s. 6d.; Seagrave, 15s.; Grime's Golden, 16s.; Jonathan, 15s. to 16s. 6d., and McIntosh Red, 17s. to 17s. 6d. Jaffa Oranges made 17s. and first consignments of Valencia Oranges realised the following prices: 300's, 24s. to 26s.; 240's, 28s. to 30s.; and 420's, 34s. to 37s.; Grape Fruit ranged from 20s. to 22s.; and Mandarins, 1s. 8d. per tray; Winter Nelis Pears, 15s. 6d. half-case; Californian, 26s. to 28s. per case; home Grapes, 3s. 6d. to 3s. 9d. per lb.; Belgian Colmar, 1s. 2d. to 1s. 4d.

In the vegetable market, English Cauliflowers averaged 6s. 6d. per dozen; Lettuce, outdoor, 3s. to 3s. 6d.; indoor, 1s. 9d. to 2s.; Endive, 4s.; French Carrots and Turnips, 1s. 2d. per bunch; Guernsey French Beans, 1s. 6d. to 1s. 8d. per lb.; and Mushrooms, 2s. 6d.

TRADE NOTE.

Patents and Trade Marks.—Any of our readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle*.

CATALOGUES RECEIVED.

Perry's Hardy Plant Farm, Enfield, Middlesex.—Japanese, American and European Lilies, etc.

Austin and McAslan, Glasgow.—Alpine and Herbaceous plants; Trees and shrubs, fruit trees. etc.

Little and Ballantyne, Ltd., Carlisle.—Trees and shrubs, Roses, etc.

Oliver and Hunter, Moniaive, Dumfriesshire.—Seeds of alpine and herbaceous plants.

Clibrans, Ltd., Altrincham.—Chrysanthemums.

Foreign.

Sluis and Groot, Enkhuizen, Holland.—Seeds. (Wholesale).

H Correvon, Floraire, Chene-Bourg, nr. Geneva, Switzerland.—Seeds.

GARDENING APPOINTMENTS.

Mr. A. O. Marshall, for the past two years gardener to the Lady Elinor Denison, Ossington Hall, Notts., as gardener to G. Tate, Esq., Bere Court, Pangbourne, Berks. (Thanks for 2/6 for R.G.O.F. Box.—Eds.).

Mr. W. Everett, for nearly three years gardener to the Hon. Lady Fitzwilliam, Barnsdale, Oakham, Rutland, as gardener to Lt.-Col. Clarke, Blunham Grange, Sandy, Beds. (Thanks for 1/- for R.G.O.F. Box.—Eds.).

Mr. H. McMillan, for the past two years foreman at The Gardens, Castle-Milk, Lockerbie, and Leighton Hall, Welshpool, as gardener to R. Olaf Hambro, Esq., of Kidbrooke Park, at his Scottish Estate, Glendoe, Fort Agustus, N.B. (Thanks for 5/- for R.G.O.F. Box.—Eds.).

Mr. S Overall, for the past seven years gardener to G. Geary, Esq., The Cedars, Barwell, Leicester, as gardener to Gordon Stewart, Esq., Send Manor, Ripley, Surrey. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. Frederick Leighton, for the past eight years gardener at Red Hall, Shadwell, Leeds, has commenced business on his own account at South View Nurseries, Barmby Marsh, Howden, E. Yorks.

Mr. E. Griffin, for four years gardener to G. S. Barwick Esq., Inholmes, Woodland St. Mary, Hungerford, and previously for five years gardener to A. Barclay, Walker, Esq., when at Weybridge, Surrey, as gardener to Lady Fitzwilliam, Barnsdale, Oakham, Rutland. (Thanks for 2/6 for R.G.O.F. Box.—Eds.).

Mr. A. Handley, for the past three years gardener to Vincent Robinson, Esq., Park House, Newark, Notts, as gardener to Lady Elinor Denison, Ossington Hall, Newark, Notts.

THE
Gardeners' Chronicle

No. 2137.—SATURDAY, DECEMBER 10, 1927

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SUPPLEMENT PLATE.

Smilacina racemosa.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the past fifty years at Greenwich, 40.4.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 7, 10 a.m. Bar. 29.9. Temp. 45°. Weather, Dull.

The Maintenance of Pure and Vigorous Stocks of Varieties of the Potato.

ALTHOUGH written primarily for growers of seed Potatos, the brochure* which bears the annexed title should be in the hands of all gardeners who grow Potatos; for it will enable them to realise how arduous is the task discharged, and generally extremely well discharged, by those responsible for the raising and distribution of seed Potatos. It is to them, indeed, no less than to the skill of the cultivator, that yields of this important crop are generally so high. We say this advisedly, notwithstanding the fact that the *average* yield throughout England and Wales is rather less than seven tons per acre, which is certainly nothing to boast of! A careful analysis of yields in different parts of the country would, we are sure, reveal the fact that this not particularly high average is made up of two components, one representing the contribution made by really good growers in districts favourable to this crop. This contribution ranges from fifteen to twenty tons to the acre. The other component represents the yield of crops raised by cultivators who are growing Potatos in less suitable districts and who make no special effort, either by choice of seed or suitable application of fertilisers, to obtain a large crop. It is to the latter class that this booklet should be particularly valuable, for it will force upon their attention the importance of obtaining fresh "seed" from suitable sources rather than persistence in using their own "saved" seed even when the crops from which the seed is taken are themselves of poor yield. Representatives of these two classes are to be found both among farmers and gardeners. That some of the former should have perforce to be content with a seven-ton or smaller crop may be excusable, but there is no excuse for the gardener who works on any ordinary soil if he gets on an average less than eight tons to the acre. Suitable selection of seed and appropriate manuring will ensure in almost all seasons a crop of that modest size. It is not, however, our purpose here to descant upon this subject, but rather to indicate the more interesting points in the valuable booklet now under notice. The first section deals in an admirably clear and simple manner with the methods of rogueing which have to be practised by growers of seed Potatos, and is accompanied by a description of those characters of foliage and flower, a close observation of which is essential if rogues are to be recognised and eliminated during the early and later periods of growth of the Potato. At a yet later stage attention has to be directed to time of maturing as indicated by the dying down of the haulm and by the form and colour of the tuber and the sprout. This decline is followed by succinct descriptions of the chief commercial varieties of Potato, together with a list of the rogues which are apt to be found in each of them. It is a curious and interesting fact that rogues are very obstinate fellows, as witness the fact that varieties which have gone almost completely out of cultivation, such, for example, as Magnum Bonum, are constantly turning up as rogues. Following on this section is a diagnosis of the characters of new and uncommon varieties, and then comes a description of the rogues themselves, of which, needless to say, there are many. The information contained in these sections make this little book an indispensable work of reference to Potato growers, at all events to those who adopt the common and generally commendable practice of "growing on" home-saved seed for a second year. In the last section a brief account is given of the means by which the most serious Potato diseases may be recognised, and the steps to be taken to mitigate their ravages. Of these diseases, Late Blight is, of course, the most prominent, and disastrously so in the present year. Spraying or, according to more recent experience, dusting with copper-sulphate-lime (Bordeaux mixture) is, of course, the chief means of combating this disease. But growers in wet districts may help themselves to better crops by planting varieties which are to some extent immune from attack of this disease. Among these relatively resistant varieties are Arran Consul, Evergood, Rhoderick Dhu, President, Lochar, Irish Queen, Kerr's Pink, Champion, Irish Chieftain, Langworthy, Golden Wonder and Arran Victory. Even more serious from the "seed" grower's point of view are those diseases of degeneration, Leaf Roll and Mosaic, which are widely spread and ineradicable, except, perhaps, by constant rogueing. Every gardener, unless he is particularly lucky, finds at one time or another evidence of the existence of these diseases in the occasional (or frequent) occurrence of plants which, when lifted, bear only a small crop of seed-sized tubers. He has also frequent opportunities of seeing the symptoms of these diseases in the undersized, wizened plants which are apt to occur here and there among their healthy, green, upstanding, normal fellows. There are, unfortunately, many of these diseases of degeneration, and the booklet concludes with a succinct description of their several symptoms. These virus diseases are among the most serious and most obscure of all maladies. The affected plant contains something the nature of which is unknown, but which, when inoculated into another Potato plant, is capable of reproducing the disease. Some varieties are more susceptible than others; but none is immune. Yet some plants are in a half-way condition, they carry the virus, but do not exhibit the symptoms of the disease which it engenders. Green Fly and sucking insects are said to be the chief agents in spreading virus diseases from plant to plant, but what the active agent is and where it comes from are for the future to discover.

Our Supplement Plate.—The illustration reproduced as a Supplement Plate to the present issue represents Smilacina racemosa as cultivated so successfully by Mr. W. G. Baker, at the Oxford Botanic Garden. This beautiful and graceful, hardy, May-flowering species is found in shaded or partially-shaded places throughout the greater part of the United States of America. It is a Lilaceous subject, occasionally known as False Spikenard, and also as False Solomon's Seal. The small, whitish flowers are produced freely in loose, six-inch panicles that terminate growths which may be from one foot to three feet tall. Smilacina racemosa is figured in *Bot. Mag.*, t. 899, under the name of Convallaria racemosa, and the accompanying text states that the species was "cultivated in this country by Mr. John Tradescant, junr., in 1656."

"The Gardeners' Chronicle" Almanac for 1928.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Mr. Clarence Elliott.—We have received a very bright and interesting letter from Mr. Clarence Elliott, together with another instalment of his travel notes. He offers his best wishes to all friends for the Christmas season; he hopes to spend his "Christmas holiday" in Juan Fernadez.

Travelling Horticultural Exhibition at Leipzig.—During the period from the 5th to the 10th June next, the travelling exhibition of the German Agricultural Society will be at Leipzig. The town authorities are co-operating heartily to make the exhibition a success, and a large hall and ample out-of-door space are being prepared for its reception.

Keeping Grapes One-hundred-and-fifty-six Years Ago.—A correspondent writes:—I have recently come across a book, dated 1771, called *The Modern Gardener*, or *Universal Kalendar*, by Mr. Hitt, revised by James Meader, in which I found details of a method of keeping Grapes through the winter and which, I feel sure, will be read with interest by gardeners of the present day. It is as follows:—"The ripeness of Grapes is known by their clearness on the bunch, as well as by their soft and mellow flavour; as soon as the frosts come they must be gathered, and the following preparation made for them: Get two or three wooden boxes of a foot deep and about the same breadth; let the length be according to the quantity of Grapes intended to be preserved in them. Sift very fine a good quantity of wood-ashes that have been well-burnt; let the boxes and the ashes be perfectly dry, but not hot; then spread over the bottom of each box, some of the ashes to cover it, four inches deep. This done, in the middle of a fine, dry day, gather some of the best bunches of Grapes; examine them, and pick off the green berries and any that are eaten by insects or decayed; then lay the bunches side by side upon the bed of ashes in the box, the length of the bunch the cross-way of the box. When the bed is covered with them, sift on more of the ashes, and let them run in between the berries, upon every bunch where there is room; then place another layer of bunches, sift over more ashes, and proceed thus till the box is filled; then set it in a dry place, but out of the reach of heat; in this manner let the several boxes be filled; this is a much preferable method of preserving Grapes than is practised by putting the bunches into paper bags, and hanging them up in a room; for by thus covering them with ashes in boxes they will keep good, and be fit for the table during the whole winter." The punctuation is as given in the book; the work is an eminently readable one and full of sound practice. Names of varieties are scarcely recognisable at the present time, but most of the cultural hints are such as are frequently given to-day.

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* The Maintenance of Pure and Vigorous Stocks of Varieties of the Potato. *Miscellaneous Publications*, No. 3 (revised edition, 1927). Board of Agriculture for Scotland. To be obtained from the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh. Price 1s. net, post free.

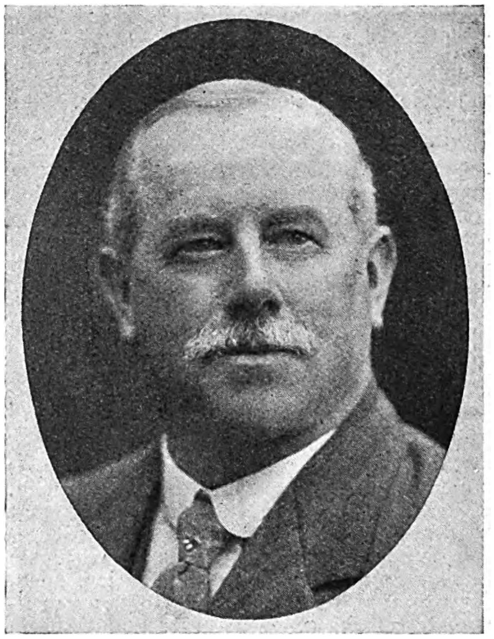
Harvesting the Briar Rose.—October and November are the great months in the Belgian Ardennes for obtaining Briar Rose plants from the hedges. The task is not an easy one, involving as it does breaking a way, hatchet in hand, through the thorns and tangled growths to the selected plants; it requires strength, adroitness, and a tough skin. The harvester presents a strange appearance, clad in stout corduroy, the head and face protected by a wide-brimmed, felt hat; the Briar-gatherer who is experienced and knows the country well can collect fifty or more Briar stocks per day. These sell at one franc or one franc fifty each, according to quality. Thousands are sent from the Ardennes region every year to nurseries in Brussels and in the Belgian provinces.

R.H.S. and Kindred Societies.—During November, representatives of the National Chrysanthemum, National Dahlia, National Sweet Pea, Rhododendron and Iris Societies met in the Library at the Royal Horticultural Hall, at the invitation of the Council of the Royal Horticultural Society, to consider charges for the letting of the R.H.S. halls for exhibitions of kindred societies. Sir William Lawrence, Bart., presided, and Mr. G. W. Leak also represented the Council. The result of this conference is a happy one, for the Council of the Royal Horticultural Society has agreed to provide free hall services, such as the Society provides for its own shows, on the understanding that the Society concerned shall admit holders of Fellows' tickets free of charge, pay the overtime of the staff during the show and during the preparation and clearing of the show, and also the wages of any additional staff required for the purpose. The halls must be used strictly in accordance with the custom of the R.H.S. towards its own exhibitors. The Society concerned will, as hitherto, receive the gate-money.

Calanthe Hexham Gem var. Phyllis.—Mr. Clive Cookson informs us that the Calanthe exhibited by him at the meeting of the Royal Horticultural Society on November 29, under the name of Calanthe Hexham Gem var. 4.B. has now received the varietal name of Phyllis. This fine new Orchid, which received an Award of Merit, was described in our issue of December 3 (p. 452).

A Norwegian Nursery's Centenary.—We have received from the I. J. Moum Nursery, at Trondjem, Norway, a very nicely got up brochure containing the illustrated history of the nursery which is celebrating its one-hundredth year of existence. A frontispiece shows the proprietor and his wife, and the tail-piece a couple of pretty children, apparently the son and daughter of the house. Mr. Moum is to be congratulated on the progress the business has made, and upon the condition of prosperity which it evidently enjoys.

Mr. Lewis Smith.—Born in Devonshire, on the Earl of Portsmouth's estate, Mr. Lewis Smith spent his earlier years in "red Devon by the sea," and after school days entered the service of Messrs. W. B. Smale and Son, Torquay, where he gained experience in general nursery work, and particularly in the propagation and cultivation of fruit trees and shrubs. As commercial horticulture did not appeal to him, however, he subsequently served in several private gardens, and presently took charge of the gardens at Clarence Park, Weston-super-Mare, where he laid the foundation of a long series of successes as an exhibitor. His next appointment was at Llanvair House, Ascot, where H. J. G. Rebow, Esq., had a very fine establishment. Later, Mr. Smith became gardener to the late Robert Fellowes, Esq., at Shotesham Park, Norwich, where he remodelled and replanted the gardens and became famous as an exhibitor of Orchids, stove and greenhouse plants, hardy flowers, Grapes, Peaches and Pears. On several occasions he won the premier award at Norwich for an exhibit of hardy flowers, consisting of over one hundred kinds and varieties, and on six occasions won the Royal Horticultural Society's Medal offered for the best exhibit in the show. While at Shotesham Mr. Lewis Smith joined the East Anglian Horticultural Club and became its President at a time when Mr. William Allan, of Gunton, Mr. George Davison, of Westwick, and Mr. William Oclee, of Blickling, were enthusiastic members of the Club. In 1911, Mr. Smith went to Cadland Park, Southampton, to take charge of the gardens for Captain Maldwin Drummond. Cadland is a fine old garden, with magnificent walls that offer fine scope for the cultivation of choice fruits and plants. Since the war, Mr. Smith has been particularly successful as an exhibitor of fruits. He has won the Gordon Lennox Cup on two occasions, the Hogg Silver-gilt Medal and the Medal of the Fruiterers' Company, besides scores of first prizes at London, Birmingham, Southampton and Tunbridge Wells, and he has been almost as successful with Orchids as with fruits, as there is now a very fine collection of these plants at Cadland Park, where Captain Drummond takes a very keen interest in all the departments of his beautiful garden. In the autumn of 1925, Captain Drummond appointed Mr. Smith as agent to the whole of the Cadland estate, a position which he continues to hold. The charge of the gardens devolved upon Mr. Smith, junior, whose father now regards the garden as his hobby and recreation rather than his business.



MR. LEWIS SMITH.

An American Horticultural Trade Directory.—The well-known American publishing firm, the A. T. de la Mare Co., of New York, has issued a useful *Horticultural Trade Directory* for 1928. It mainly consists of a list of nurseries, grouped primarily under States and secondarily under the towns in each state, given alphabetically. There are also lists of societies, a buyer's guide, and one or two other minor features. The usefulness of the book as a reference directory is slightly marred by the interpolation of displayed advertisements among the classified lists and by irrelevant matter (see p. 204), between two States; also, as it is only bound in card, the price seems rather high at $3.00.

Promising Young Scientist.—Much gratification is being expressed in Aberdeen University circles and among his own personal friends at the continued progress made by Mr. James W. S. Marr, M.A., B.Sc., Aberdeen, in his work as a scientist. It will be remembered that in 1921, Mr. Marr, then a patrol leader in the Boy Scouts, was picked, along with another Scottish lad, from an enormous number of applications, to join Sir Ernest Shackleton's expedition on the "Quest." The conditions were not favourable to the other lad, and he had regretfully to return home, but Mr. Marr went on and remained with Sir Ernest until that intrepid explorer died at South Georgia, in January, 1922. This untoward event upset all calculations, and the expedition had to be abandoned. Mr. Marr returned home and studied Science and Arts at Aberdeen University, where he duly took the degrees of B.Sc. and M.A. In 1925, now well-equipped, he joined the British Arctic Expedition where his duties were largely hydrographical, but he made a fine collection of rare plants in Spitsbergen and Franz Joseph Land, which he carefully collated and detailed in an article in the *Journal of Botany*. For the past twelve-months, Mr. Marr has been engaged, under the auspices of the Colonial Office, in directing the assorting and cataloguing of the many rare specimens sent from the exploring vessels, "Discovery" and "William Scoresby," for the British Museum. Now he has gone forth upon another tour of research work, the venue this time being the Antarctic regions. His first duty will be the establishment of a laboratory at South Georgia, which will be utilised for arranging and handling the numerous specimens of many kinds that will be gathered by the explorers for experts to examine and give their opinion upon. The two vessels mentioned are, meantime, undergoing a thorough overhaul preparatory to setting out on their new quest, the establishment of the laboratory at South Georgia being part of the plan. Mr. Marr's chief duty on this new expedition will be to carefully chronicle whatever is found to be of scientific interest and practical value, and the task is one which his friends know he will enter into with characteristic zeal and zest, and add more triumphs to his already wonderful career. If all goes well, and no untoward incident occurs, Mr. Marr will most likely be away for three years.

Insectivorous Plants.—The next meeting of the Association of Economic Biologists will be held at 2.30 p.m., on Friday, December 16, at the Imperial College (Botany Department, Prince Consort Road), South Kensington, when Dr. G. H. Rodman will lecture on "Insectivorous Plants and How They Live." Students will be cordially invited. The annual meeting of the Association will be held on Friday January 20, 1928, when the President will deliver his address. On this occasion the members of the Association will dine together.

Rhododendron Association.—The Show Committee of the Rhododendron Association has arranged the schedule for the third Rhododendron Show; this is now in the hands of the printers and will be circulated before the end of the year. A meeting of the Council to elect members formally will be held on December 13. All who join before that date will be known as Founder Members, and although the application forms ask for proposers and seconders, the Council will be pleased to arrange this, as a list of members has not yet been published.

Christmas Trees.—If there were no other evidences, the abundance of Christmas trees in Covent Garden would suffice to indicate the near approach of Christmas. These popular symbols of the festive season are represented by examples twenty-five feet or even more in height, and others of varying stature down to midgets about eighteen inches high. But in addition to the Christmas trees in natural form—from the eastern counties, chiefly, and from certain parts of the continent—there are others that have received the assistance of "art." These are coated with cellulose paint, and may be silver, bronze, purple, blue or vivid green. Moreover, sprays of Abies and Picea are offered, in boxes, also coloured with similar paint.

New Agricultural College for West of Scotland.—At a meeting of the Governors of the West of Scotland Agricultural College, held in Glasgow, on Monday, the 5th inst., it was agreed to rescind a previous resolution recommending that the activities of the College at Glasgow and the Dairy School at Kilmarnock be continued on land to be acquired on the Pollok estate, Glasgow, and accept a revised offer by Mr. John Hannah, Girvan, of Auchencrulve estate, near Ayr, for the work carried on at the experimental farm and Dairy School at Kilmarnock. Mr. J. H. Turner, who presided, explained the negotiations which had taken place between Sir John Gilman, Mr. Hannah and himself, the result of which was that the removal of the college from Glasgow was no longer a condition, and that the new proposals allowed for a total area of 900 acres of land. Mr. Hannah's gift is estimated to bear a value of about £24,000, and he has also agreed to hand over the whole income derived from the land until such time as it is required for college purposes. The income from this source is estimated at between £1,140 and £1,175. The understanding is that the college would have rather more than 400 acres of arable land, and about 140 acres of pasture, while the mansion house would be adaptable easily to the requirements of the college. Hostel accommodation is to be provided for fifty to sixty students. Recognising the great need for enlarged premises for central classes in Glasgow, it was further resolved, on the motion of the Chairman, to appoint a special committee to secure a site and collect funds for the erection, equipment and endowment of a new college at Glasgow. Dr. Murray stated that a new college worthy of agriculture in the West of Scotland, would cost anything from £50,000 to £100,000, and he hoped the project would be taken up with enthusiasm. A suitable letter of thanks for his magnificent gift is to be sent in name of the Governors to Mr. Hannah.

Association of Parks and Botanic Gardens Superintendents.—Under the auspices of the London and District Branch of the above association, a meeting will take place in the Lecture Room of the R.H.S. Hall, Vincent Square, on Tuesday, December 13, when an address will be given by Mr. W. Dallimore, Curator of the Museums, Royal Botanic Gardens, Kew, on the subject of "Trees for Parks, Gardens and Roads; with Special Reference to Towns." The chair will be taken by Mr. A. J. Ashmore, of Peckham Rye Park, at 7 p.m., precisely. All Parks Superintendents and their foremen who may be in London on this date will receive a hearty welcome.

Southport Flower Show, 1928.—Her Royal Highness the Duchess of York has consented to become a patroness of the Southport Flower Show. The National Sweet Pea Society has accepted the invitation of the Southport Flower Show Committee to hold a Northern Provincial Sweet Pea Show in conjunction with the 1928 Southport Show on August 22, 23 and 24. The total income from the exhibition held this year was £10,474 14s. 7d., and the total expenditure £9,157 6s. 6d., showing a credit balance of £1,317 8s. 1d.

Coal Forests.—This was the subject of a delightful and instructive lecture given by Miss E. Barnett to the members of the Aberdeen Natural History and Antiquarian Society in the Aberdeen University buildings last week-end. In a charming and lucid manner, Miss Barnett, with the aid of photographs and diagrams, led her hearers through the characteristic formation of modern plant groups, including Ferns, Conifers, Mosses, flowering plants, etc., and then back to the primeval coal forests. This was a most interesting part of the lecture, and must have led some members of her audience to look up again their copies of Solms Laubach's *Fossil Botany* and Seward's *Fossil Plants*. Miss Barnett drew a fine picture of great forests full of giant trees, plants and fungi, and then traced some of the descendants of these to the flora in existence at the present day, but greatly reduced in size. She dwelt on the difficulties botanists and geologists had faced in their work of reconstructing the coal forests of the past, and how very slender were the data they had to go upon. It might be a leaf or leaves here, a stem impression there, and twigs somewhere else. She informed her hearers that it took from 1829 to 1905 to complete the life history of one of the plant forms. Some of our Ferns and creeping plants were directly descended from the denizens of coal-forests. During her lecture, Miss Barnett showed some fine impressions of fossilised plants and trees in coal seams and peat beds, thus adding greatly to the lucidity of her remarks. A warm manifestation of thanks was Miss Barnett's reward.

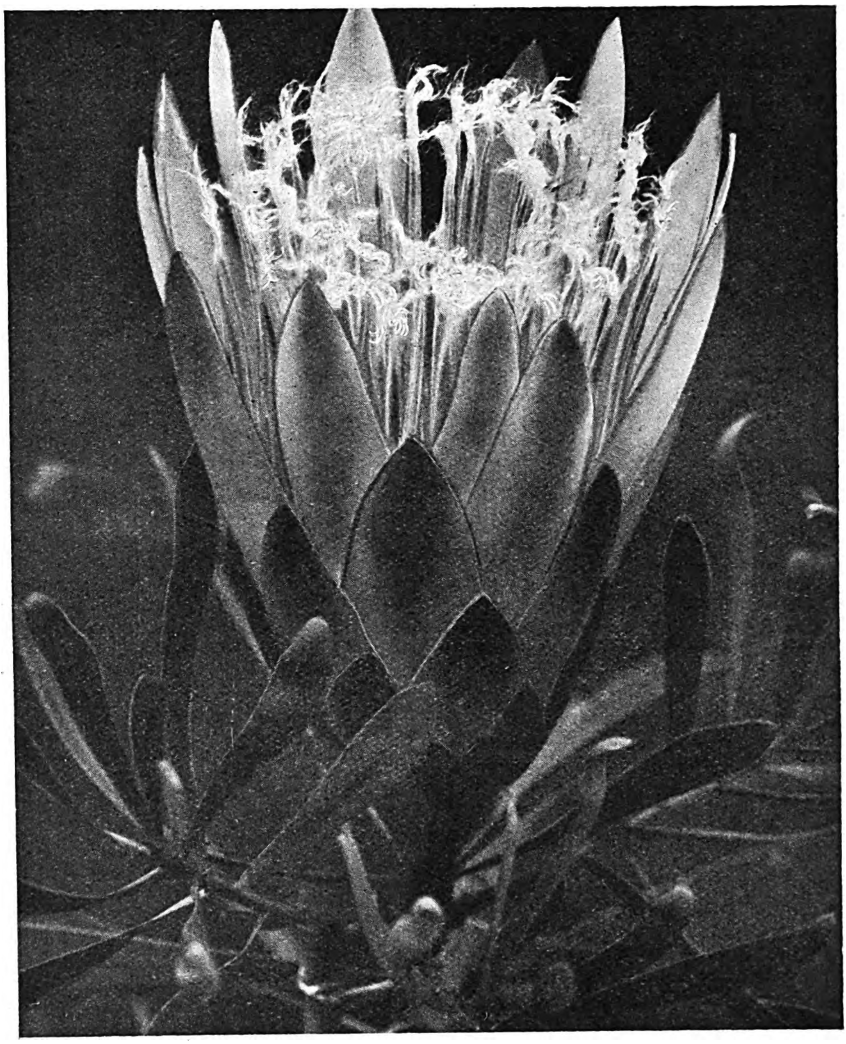


FIG. 210.—PROTEA MELLIFERA.

Exhibited by Sir Wm. Lawrence, Bart., Burford, Dorking, at the R.H.S. Meeting of November 29. (see p. 452).

Appointments for the Ensuing Week.—MONDAY, DECEMBER 12: National Chrysanthemum Society's Floral and Executive Committees meet; United Horticultural Benefit and Provident Society's meeting; Guildford and District Gardeners' Association's meeting; East Anglian Institute of Agriculture's lecture. TUESDAY, DECEMBER 13: Royal Horticultural Society's Committees meet; Jersey Gardeners' Society's meeting. WEDNESDAY, DECEMBER 14: Wimbledon Gardeners' Society's meeting; London Gardens Guild lecture. THURSDAY, DECEMBER 15: Ipswich Gardeners' Association's meeting; Linnean Society's meeting. FRIDAY, DECEMBER 16: Association of Economic Biologists meet; Manchester and North of England Orchid Society's meeting. SATURDAY, DECEMBER 17: Lancaster Horticultural Association's lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*German Stocks.*—Perhaps in the history of German Stock growing, there are few instances on record of plants keeping in flower for such a long period as the following: The seed was sown in the spring of 1850; the plant flowered that season, and towards the end of autumn was potted and placed in a greenhouse, where it bloomed all the winter; in the spring of 1851 it was planted in the open border, still in flower, and continued all summer and autumn. Towards the close of the year it was again potted and placed in the greenhouse, where it kept flowering all the winter. It was again put out in the spring of the present year and had about twenty spikes of flowers on it when planted out; it was early in the season and there were few flowers to bear it company; it bloomed all the summer. When autumn came, however, it showed signs of decay, and the beautiful double blossoms began to get few and far between; but the plant surely did well to keep up a succession of flowers from the summer of 1850 to the autumn of 1852. *P. M. Gard. Chron., December* 11, 1852.

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Trichopilia.—The genus Trichopilia includes about fifteen species; two of them, T. laxa and T. fragrans were grown under the name of Pilumna, but as they succeed under precisely the same conditions they are all included under the same heading, as the geographical area over which the species are dispersed is, comparatively speaking, limited. T. fragrans is, as its name implies, a sweetly-scented Orchid, and is one of the very best, fragrant, winter-flowering plants, and should be grown by those who appreciate sweet-smelling flowers. This plant may be grown at the warmer end of the cool house, or in any house where the winter temperature does not fall below 50°. Other species of these interesting plants, such as T. suavis, T. s. alba, T. coccinea, T. tortilis, T. crispa, T. marginata, T. laxa, T. Backhousiana, and a few others, require a few degrees more heat and a slightly drier atmosphere, as they detest a damp position during their resting season. The majority of these plants will have completed their growth and should be watered with care, or their pseudo-bulbs and leaves will quickly become spotted and disfigured; over-watering at this season also causes many of the roots to decay. So long as the bulbs remain plump, very little or no water will be required, but should they show signs of shrivelling, a moderate amount of moisture may be afforded them. During their resting period the members of this section of Trichopilia should be placed in a cool, dry part of the house, where an intermediate-house temperature is maintained. They are fond of a light position, but not actual sunshine, as the leaves soon lose their green appearance when exposed to the sun. When showing their flower spikes the plants may be placed in a shady position in the Cattleya house, as they will open better there and be less likely to become spotted by excess of moisture.

Culture.—The different species have individual peculiarities, but the close observer will soon discern their requirements. Trichopilias should be repotted soon after growth commences, and a clean fibrous mixture similar to that used for other small-growing Orchids is suitable for them. Plants now flowering should be potted early in the spring, as it is advisable to defer repotting until the days become longer, and the growing conditions have improved. When in full growth, they will need as much water as any cool-house Orchid, and when well-grown are beautiful and interesting plants. The hybrid T. Gouldii (fragrans × suavis) first flowered in 1911 and succeeds under the same conditions as the other members of the genus.

THE KITCHEN GARDEN.

By R. H. Crockford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Mushroom House.—Continue to collect manure and make fresh beds for the purpose of maintaining a supply of Mushrooms throughout the season. When beds are beginning to decline and are becoming dry, holes should be bored at intervals, and warm, weak, liquid manure poured into them. Failing this, mix about half-an ounce of salt in each gallon of warm water, and apply in similar fashion. Keep the atmosphere of the house humid by frequently damping the walls and floors, trying, so far as possible, to imitate the conditions of a warm September night. Do not allow the temperature to rise above 55°, or the Mushrooms will be loose and leggy; use as little artificial heat as possible, sweet fermenting materials which give off gentle heat being much preferable. Where woodlice are troublesome, use hollowed pieces of Potato as traps. Bring successional batches of Seakale, Chicory, Dandelion and Rhubarb into the Mushroom house or a separate forcing house.

Early Potatos. — Now is a good time to commence the forcing of Potatos to provide a few very early dishes. For this purpose nine-inch or ten-inch pots are suitable. These should be well-crocked and about half-filled with friable soil, consisting of loam and leaf-mould. Insert three or four nicely-sprouted tubers, each with one strong sprout, and cover them with about three inches of the compost. Very little water will be needed for some time to come, and a temperature of about 50° will be suitable to commence with. When growth appears above the soil, place the pots in a light position, as near to the glass as possible so as to keep the foliage sturdy. First Crop, May Queen, and Sharpe's Victor are good varieties for very early forcing.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Orchard House.—Where very early Peach and Nectarine trees have been helped forward by the use of mild fermenting material, the buds will now be on the move, but no advance on 45° to 50° through the night should be made before the trees come into flower. So soon as the petals begin to show colour the house should be fumigated mildly on a calm day and well syringed the following morning to ensure immunity from fly during the time the trees are in flower. When the flowering stage is reached, a little more fire-heat will be necessary, particularly through the day, as Peaches always set best when a free circulation of fresh air accompanies the opening of the flowers. A little less moisture at this stage will be beneficial, but unless the weather is wet or foggy the walls and paths may be damped while gentle warmth is turned on for the day. From this time onwards the temperature may range about 60° through the day, and 50° at night, according to the outside conditions.

General House.—The weather has been too mild for flower buds, even in the open air, therefore this softening tendency should prompt all who value their crop to be prepared to house pot fruit trees on the eve of any change. The end of this month or early next month is quite soon enough to close the house; meantime, the pots and trees may be cleansed and finally arranged. The main object in the management of this house—which may contain the latest batch of Peaches, Pears, Apples, Plums and Cherries—is to secure good crops of fruit which shall lead up to and connect with crops from the open air. This end can be attained in a very ordinary glass structure, and often without the aid of fire-heat; the most important point at this stage is complete rest for the trees, not only before but for some time after they are housed. As the natural flowering season comes round the buds on the trees are sure to be in advance of their fellows in the open, and when this stage is reached retarding ends, and a temperature suitable to the opening of the flowers and the setting of the fruits must be maintained. If the pots are plunged in litter the roots will take no harm, but a sharp look out must be kept to prevent damage to the buds by birds.

Potting.—If pyramids and other forms of home-grown trees have not yet been lifted for potting no time should be lost in getting the work done. When late trees are potted in December the roots should be carefully pruned as a preliminary to ramming rather dry soil about them. Gardeners who make a first essay at orchard house culture should invest pretty freely in trees of choice Pears, as these will give a good return for the labour expended on them.

Cucumbers.—Plants in full bearing need frequent applications of warm, liquid manure and judicious syringing with tepid water, but unless plants intended to supply fruit from January to March are decidedly weak, the rough compost, kept properly moistened with clear water, should maintain a medium and healthy growth which will not suffer when bad weather arrives. Old fruiting plants intended for removal so soon as young ones are bearing, need a temperature of 66° to 70° by night, and proportionately warmer through the day; they should be top-dressed frequently with rich, rough compost kept handy in a warm corner for the purpose. The temperature for spring plants may be kept at 63° to 65° at night, with a day circulation of fresh air which should be made warm by passage over the hot-water-pipes before it reaches the foliage.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Stocks.—These are useful subjects for flowering in the early spring, but to be successful with them, and to secure good spikes of bloom, they must not be starved. Plants that have been raised from seeds sown at intervals, as advised, should, as they become ready, be transferred to the receptacles in which they are to flower, and grown on greenhouse shelves near the roof-glass. Failing this accommodation they may be grown in frames from which frost is excluded and where they may obtain the maximum amount of light.

Cinerarias.—Early-raised plants have filled their receptacles with roots and are showing flower. They should be encouraged by discreet waterings with soot-water and the occasional use of some reliable fertiliser. Watch carefully for green-fly, and on its first appearance take steps to eradicate this pest. The better plan is to spray the plants frequently with an insecticide as a preventive measure.

Bulbs.—Care should be taken not to allow bulbs to remain plunged in ashes or other materials after they have started into growth. Remove them to frost-proof frames and gradually expose them to light and air.

Euphorbia jacquiniaeflora.—This delightful stove subject is one of the most beautiful and useful plants to cultivate, both as regards its decorative value and the length of time it remains in flower. The flowering sprays may be used in a cut state for filling large vases; long stems are produced when the plants are grown under good conditions. When used in a cut state, however, the stems, should be dipped into nearly boiling water immediately they are severed to prevent excessive bleeding and consequent flagging. Certain growers use a hot iron to seal up the ends, but after trying both methods, I much prefer the former. Continue to afford light stimulants until half the flowers are open, after which no feeding is necessary, and when this stage is reached a somewhat cooler temperature is desirable, to prolong the flowering period, but at the same time the atmosphere must be kept slightly drier to prevent the damping off of the flowers. This Euphorbia should never be allowed to dry out or loss of foliage may follow; on the contrary, an excessive use of water at the roots and sudden fluctuations of temperature will produce similarly unpleasant results.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Grafting.—Notes should be made of all unfruitful and inferior varieties of tree fruits, and if the stocks are healthy, grafting with more suitable kinds should be carried out when the proper time arrives. In the meantime, scions of desirable varieties should be collected, tied up, labelled correctly and heeled in on a north border until they are needed. When shortening back the branches to obtain grafts do not cut too severely, but shorten the branches more or less according to the shape and thickness of the stems on which the scions are to be placed. Trees grafted last season should receive attention, reducing the number of growths to those required to form well-shaped heads. Prune side-shoots back to within a few buds of their bases and allow each leader to extend more or less according to its strength and length. All temporary supports should be replaced, as necessary, until the grafts are sufficiently strong to withstand strong gales when in full leaf. Keep the stems and trunks free from young growths so that the young scions may receive all the support possible from the old stock.

Strawberries.—The growth of Strawberries is much better this season than during the past three or four years, and if the plants pass through the winter without being crippled by severe frost and cutting winds there should be a good crop next year. If not already given, a good mulching of manure should be placed over the roots and along the space between the rows; this will greatly benefit the plants in spring and also protect the roots against very severe frosts.

Reminders. — Examine Gooseberries and Currants at frequent intervals, especially where sparrows and other birds are numerous and destructive to the buds, as an oversight in this respect may result in a serious loss. Frequent dustings with soot, lime, and wood-ash may ward off attacks, while lines of black cotton strung along at various heights above the bushes will also serve.

Fruit Trees.—Where hares and rabbits abound, newly-planted fruit trees should have their stems painted with Bentley's tree-protecting dressing, or protected with strips of wire-netting, otherwise much harm may be done in a single night.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Arbutus.—The genus Arbutus comprises evergreen shrubs or small trees of much beauty, but these are not hardy all over the country, especially in inland districts. They are, however, quite hardy in the south and south-western counties, and all up the west coast of Scotland —a sufficiently wide range to justify their more general cultivation. They prefer a well-drained, warm soil and a sheltered position, otherwise their successful cultivation presents no difficult. Although they make handsome specimens individually, they look best when planted in a small grove. At Kew the species mentioned below are perfectly hardy and generally attain a height of fifteen to twenty feet. Arbutus Unedo, the Strawberry Tree, is the most common species, and is a native of south Europe and the west of Ireland. It is at its best from October to December, when it is in flower and bearing the previous year's fruits, which are then a bright red. There are several varieties, the best-known being Croomei or rubra-compacta and integerrima. A. hybrida (Andrachne × Unedo) makes a handsome group and always attracts attention by its smooth red and green stems, the bark being shed annually. A. Andrachne is a native of Greece, and although introduced in 1724, is by no means so common as it should be—nursery stock being scarce—as it is a handsome evergreen, and a grouping of it, with its smooth, polished stems, is very effective. Another beautiful species is A. Menziesii, from north-west America; this somewhat resembles the last-named species in leaf, and in its even more highly-coloured stems; it is the Madonna of California. Arbutuses are propagated by means of seeds and grafting.

Ixias.—The many beautiful varieties of Ixias are generally regarded as greenhouse plants, but in favoured parts of the country they succeed in beds in the open, in sheltered positions. They should be planted in light, warm soil, in beds raised slightly above the surrounding level. They do well when planted in narrow borders at the foot of a warm wall, and should be more generally grown in such positions. In these situations they increase and flower year after year. They may be planted during December and January; if planted earlier they quickly come through the ground and make considerable growth which runs a risk of being injured during severe weather, although in this respect they are hardier than is generally supposed. Babianas and Sparaxis also succeed and should be planted under similar conditions.

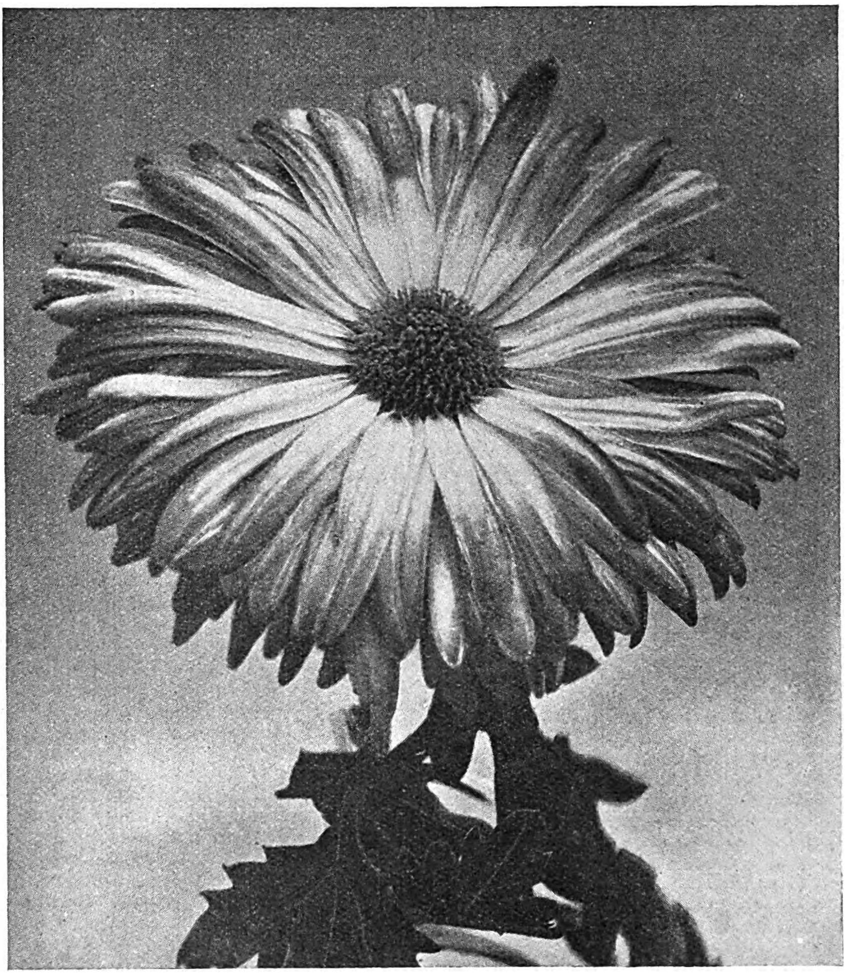


FIG. 211.—CHRYSANTHEMUM MRS. E. PAGE.

N.C.S. First Class Certificate, Nov. 28; R.H.S. Award of Merit, Nov. 29. Flowers golden-yellow, shading to bright chestnut (see pp. 475 and 452). Shown by Mr. H. Woolman.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Root Cuttings.—The present time is most suitable for inserting root-cuttings of various plants which are not readily increased by the usual methods, and where it is desirable to increase such subjects as Anchusas, an old plant should be lifted carefully and the long thong-like roots removed, replanting the dismembered plant in good sandy soil, where it may be expected to recover and grow again. The thong-like roots should then be cut up into two-inch or three-inch lengths and placed on their sides in boxes of sandy compost, covering them about an inch deep, more or less, according to the thickness of the roots dealt with, and placing the boxes in a temperature of about 50°. In a very short time new growths will be produced. Quite a variety of plants may be rapidly increased in this manner, and where all other methods have failed, it should be given a trial. Tropaeolum speciosum is an instance, while Romneya Coulteri and any specially good forms of Oriental Poppies may be increased rapidly by this method.

Bulbs.—Where these are required in flower for Christmas, much care is necessary in forcing, and any that show a tendency to outstrip the others should be removed to the cooler end of the forcing house, or placed in a lower temperature, where they will "mark time" until the others have caught up. Where Roman and Miniature Hyacinths are grown in boxes it is a curious fact that a few of them will always push on ahead of the rest, and if these are lifted carefully and made up into pans with a few Ferns from small pots, they will prove useful for the earliest decorations.

Lily-of-the-Valley.—This is a general favourite, and by means of retarded crowns may be had in flower almost at any time, but as the plants treated in this manner are short-lived, if not killed outright by the retarding and forcing treatment, it seems almost cruel to treat them in this way. Where established beds of Lily-of-the-Valley are grown, a portion of the batch may be lifted each year and the flowering crowns selected for forcing, while the smaller crowns may be replanted in beds of well-prepared soil, where, in the course of a year or two, they will also be ready for lifting. These home-grown crowns require a longer time than retarded crowns to bring them into flower, and nothing but disaster will result from the use of excessive heat in the early stages of growth; they should be brought on gradually and the temperature raised as growth becomes active. When flowering is over, these plants, if treated rationally, may be replanted; given generous treatment, they will soon recover, and in course of time again produce crowns fit for forcing. Beds of Lily-of-the-Valley have been a wonderful sight again this autumn by reason of the numerous spikes of red berries amongst the brown foliage; many visitors have had to examine the plants closely to ascertain what this lowly form of berried plant really was.

BUTTONHOLE ROSES.

ENGLISHMEN are not particularly partial to the "buttonhole" bouquet. The reason, one supposes, is the dislike of being conspicuous and different from one's fellow men. Perhaps, too, there is a feeling that the wearing of a flower borders on the effeminate. Buttonholes, I fancy, were more in vogue in Victorian times—strange though it may sound in an age somewhat sombre and austere. The buttonhole generally approved, or shall I say, condoned, is the one taken from one's own garden—the unstudied buttonhole. Men rarely enter a shop with the express purpose of buying a flower for the coat, unless it be for a special occasion, such as a wedding. The wearing of buttonholes by city men is to be encouraged. It brings brightness into drab surroundings.

Of flowers suitable, probably the Carnation takes the lead on account of its lasting property; but none appeals like the Rose. Unfortunately, unless supplied with water, it soon shows signs of distress and before the day is over has lost its freshness. The careful business man, while in the office, transfers it to a vessel of water; but a better way is to supply its wants while actually in the coat by means of a flower-holder. The metal kind, with movable clip, now in use, is ingenious and handy. It has two drawbacks. The bright bit of metal which hooks the holder to the buttonhole is exposed to view. It might be rendered inconspicuous by green enamel. The clip weakens in time, thus failing to hold the flower firmly. A more satisfactory kind of holder, though entailing more trouble, consists of a flattened glass or metal tube made to fit into a little pocket of thin material sewn on the back of the lapel of the coat. This method permits the use of a pin inside, just below the buttonhole, thus affording greater security. Such tubes used to be obtainable. Are they still in use?

A coat flower, as a rule, is incomplete without some foliage. Needless to say, the Rose's own leaf is its best accompaniment. Without water it wilts more quickly than the Rose itself. A flagging leaf spoils the effect of a buttonhole, even though the actual flower may appear fresh. Failing a water-holder, a good substitute for the Rose's own foliage is the leaf of the evergreen Barberry (Mahonia). It is similar in form, and in these days of stiff-leaved Rose varieties it is hardly distinguishable at a little distance from that of a Rose. This Barberry leaf keeps perfectly fresh the whole day without water, provided a mature one is used.

It is not the fully open Rose, but the partially expanded bud which is favoured for the buttonhole. All Rose buds are by no means suitable. A variety which gives a full bloom when expanded—the exhibition sort—is rarely so. The bud is too fat and solid looking, and usually ceases to open further in water when cut. The ideal bud is one which is not exactly static in the buttonhole, but unfolds to some degree as the day advances. The varieties which furnish the best buttonholes belong to the semi-double or even single class.

Taking the older group, the Hybrid Perpetuals, now a fast waning set, make unsatisfactory buttonholes, as they are mostly very full Roses, and also they lack, as a rule, the high, pointed centre, so desirable a feature. Perhaps the crimson Captain Hayward, being a rather thin Rose, is as suitable as any, likewise the very fragrant Fisher Holmes, of similar colouring; while Frau K. Druschki, if not of exhibition size, suits a dark coat.

Before the advent of the Hybrid Teas we had chiefly to rely on the pure Teas for buttonholes, and were often therefore dependent on the greenhouse. Now it is far otherwise. We can rely upon a supply from our Rose beds in the open from June to October, and even, in mild seasons, up to Christmas. The Rose buds most favoured are those of yellow, copper or salmon shades. Let us, however, deal with the reds and pinks first.

The most popular bedding red Rose, General McArthur, often makes quite a passable buttonhole, and if scent is required it is here in abundance. Richmond, however, is much nearer the ideal, but it lacks the vigour and certainty of the General. Liberty, darker and more velvety, has a too feeble constitution for the garden, though it is still grown under glass for the cut-flower trade. Hoosier Beauty, also a market Rose, gives a fine, dark-crimson bud, but its lax habit makes it a somewhat unsatisfactory bedder. The scentless Red Letter Day and K. of K., though of few petals, rarely give a bud of sufficient distinction. The velvety-crimson Colonel Oswald Fitzgerald and Miss C. E. Van Rossem are generally suitable, but scent here is also lacking. H. E. Richardson can, at times, give a shapely, deep crimson bud, full of perfume, but it is a variety that produces more shoots than flowers. Covent Garden is to be recommended, if scent is not required. Red varieties suitable both for the garden and the coat are not numerous.

The pink sorts show up better. We have almost the ideal in Dorothy Page Roberts; a grand grower, though on the tall side, fragrant and a free-flowerer. It withstands rain remarkably well. A Rose to be mentioned here, though hardly a pink, described as a coppery-salmon, shaded fawn, is Mrs. Alfred Tate. It gives a similarly shaped bud, but it is, unfortunately, easily spoilt by rain. That long-tried and excellent Rose, apart from its habit, Madame Abel Chatenay, is a little too full to give an ideal bud. Ophelia and its more deeply-coloured sport, Madame Butterfly, furnish exquisite buds, but as they meet our gaze in every florist's window we may want something a little different. Ivy May, of recent origin, just as shapely and finely scented, is a change. Betty Uprichard, rich in colouring and now at the height of its popularity, does not appeal strongly to me as a buttonhole Rose. But Mrs. Henry Morse does; when not too full and large. It is perfect in shape. Alas! it is rather addicted to mildew.

Passing to the more coppery pinks, there is a buttonhole Rose *par excellence* in Betty. This variety has almost the largest bud of any. Once largely grown, it is falling out of favour. It may be owing to the floppy character of the flower after the bud stage, or to its undecided colouring. It is a vigorous grower, rainproof, and fully fragrant. It certainly deserves a high place as a buttonhole Rose. Of the orange-crimsons, Henrietta is to be preferred to the more startling Madame Edouard Herriot. It has a stiffer stalk, some fragrance, and is less easily affected by rain.

Of the full coppers or oranges we have a gem in Emma Wright; but what a name for such a dusky beauty! It produces a most telling bud for the buttonhole, provided the flowering is not too profuse, when it may be on the small size. To pick faults in this variety would be approaching the hypercritical. Independence Day, of a more yellow shade, also gives a delightful bud. This is a Rose of much excellence, but is not as vigorous as the preceding one. A new Rose of continental origin, Wilhelm Kordes, promises well as a buttonhole Rose, from what I have seen of it.

The stricter yellows may be conveniently divided into those of Tea (Rosa indica odorata) origin, and those which derive this colour from the Austrian briar (R. lutea)—the so-called Pernetiana group. Of the former, Lady Hillingdon, Gustave Regis, Madame Ravary and Mrs. Aaron Ward may be mentioned as among the best for the buttonhole. The first is a pure Tea and fairly hardy. It gives a long bud, of rich colouring, but on account of its pliable habit of growth it does not make a good bedder. Gustave Regis is a "tweeny." It appears to be falling out of cultivation, perhaps owing to its being neither a climber nor a bedder. Such Roses are rather difficult to place and to manage. It is an ideal buttonhole Rose of a light shade of yellow. Madame Ravary used to be the popular yellow bedding Rose, but it has had to give way to the Pernetiana yellows. It is sweetly perfumed and can have captivating colouring, but as an autumnal it is of little value as its blooms usually come thin and a dirty, washed-out white. It somewhat lacks "point" in the bud, that is to say, it is a little too squat. As a buttonhole Rose at times I find it unsatisfactory through the stalk snapping just below the hip. Mrs. Aaron Ward at its best makes the better buttonhole, but is otherwise a less desirable Rose. It is apt to come pinkish if the weather be at all cool, and its buds ball and rot badly in the wet.

Though the yellow Pernetianas have been with us for some time, they do not as yet supply ideal buttonholes. To date, there has been little real advance on the well-known trio, Mrs. Wemyss Quin, Golden Emblem and Christine. All three may be used for the coat. Mrs. Quin is slow in coming into bloom, and is rather pale in colour, but it has most fragrance. Golden Emblem is stumpy in growth and consequently blooms sparsely. Christine, on the other hand, flowers profusely, but in clusters, so that the individual bloom is apt to be on the small side for the coat. Of the newer yellow Pernetianas, Mabel Morse is too large and globular for a buttonhole Rose, though useful otherwise. Sovereign, though shapely, is a wretched grower. Florence Izzard may be suitable, but I have had no experience of it.

Of pale Roses—whites and creams—the pure Tea, Mrs. Herbert Stevens, is distinctly one of the best for furnishing buttonhole flowers. It is hardy, vigorous and a free-flowerer, bearing a perfectly shaped bud. Its spindly growth reduces its value as a bedding Rose, and its bloom does not stand wetting very well. Clarice Goodacre, pale chrome, has a finely formed bud and a good bedding habit. Madame Pernet Ducher, a hardy Tea variety, creamy-yellow in the bud and white when full blown, has apparently fallen out of the catalogues. I still find it worth growing for the sake of its pleasing buds which carry the full Tea scent.

Of the true single Roses—those of five petals only—Irish Fireflame deserves mention as it makes an excellent buttonhole. It surpasses Irish Elegance, its forerunner, in its more vivid colouring and greater length of bud. Isobel, of more recent origin, does not make the same appeal to me as the two foregoing. *J. P., Carlisle.*

BULB GARDEN.

LILIUMS.

WHERE stocks of Liliums need to be replanted, the work should be done so soon as possible, as many of the kinds commence to grow early. The same observation applies to purchased bulbs, and if for any reason these cannot be planted at once, they should be unpacked and laid out in boxes, covering them with leaf-soil, as they quickly suffer if exposed to the air. Species that produce stem roots appear to withstand removal better than those that have basal roots only; I mean that stem rooting species usually give a good display the first season after planting, whereas, in my experience, most of the species that do not produce stem roots require one season to recover. Of course, they vary even in this respect, but if we consider species like L. chalcedonicum and L. monadelphum, no matter how quickly and carefully they may be transplanted they invariably require a whole season to recover themselves; therefore, when they are growing well they should be left undisturbed so long as possible.

The first essential in the successful cultivation of Liliums is free and rapid drainage, for stagnant moisture during the winter quickly proves fatal. Although some Lilies grow freely in any fairly light, well-drained loam, it is always wise to put plenty of clean, coarse sand around the bulb at planting time. Liliums generally do well when planted among beds of dwarf shrubs, from which they receive shelter from cold winds and frost during spring; during the summer the shade from the shrubs helps to keep them cool at the roots. All stem-rooting Liliums should be planted deeper than the non-stem-rooting species. As a general rule, six to eight inches (according to the size of the bulb) is deep enough for planting the stem-rooting species. Many of these delight in plenty of humus, such as well-decayed leaves; avoid peat unless it is permeated by roots of Rhododendrons or other shrubs. *J. C.*

HARDY FLOWER BORDER.

HELICHRYSUM BRACTEATUM.

This charming and comparatively new introduction from Tasmania is well worthy of a prominent position on a large rock garden, or in the front of a flower border. It is quite distinct from the strain of garden Everlasting Flowers usually grown under this name. Perfectly hardy and perennial, it produces in late summer and autumn masses of sharply-pointed, egg-shaped buds on foot-high stems in an attractive shade of bronze, which expand into beautiful old-gold, everlasting flowers. The plants shown in the accompanying illustration (Fig. 212) are growing in a west-facing border, fully exposed, and stood out in the open all last winter. It is difficult to imagine a prettier sight than that presented by this sheet of golden-yellow, and the flowers seem to open day after day interminably. Helichrysum bracteatum is increased readily from seeds, comes perfectly true, and seems best suited when grown in full sun and a deep, fibrous loam.

The number of good hardy perennial plants which Tasmania is giving us nowadays for our gardens is rather surprising. Another dainty Everlasting, recently introduced, is Helipterum anthemioides, which does excellently under the conditions suitable for Helichrysum bracteatum. Its slender, nine-inch growths somewhat resemble those of a Linum, and in late summer are surmounted by charming, white, papery Daisies. It looks lovely in the evening, when the light commences to fade and the fragile stems seem to disappear, so that the flowers appear to be poised, fairy-like, in the air. This also is easily raised from seeds. *Will Ingwersen, The Birch, Sharpthorn, Sussex.*

HERBACEOUS PAEONIES.

The herbaceous Paeony, one of our oldest and most loved hardy perennials, has found a place in almost every garden of the country, and is firmly established in the affections of all garden lovers, whether they be owners of the tiny cottage gardens or of more extensive domains. It is not, therefore, necessary to extol its popularity, but the modern development of the plant has led to an even greater admiration of it and opened up a wider field for its uses.

Amongst the many points which make it a valuable garden plant may be mentioned its perfect hardiness and power of resistance to inclement weather, its sturdy habit, wide range of colours in the most exquisite tints which would have been thought impossible a few decades ago, its suitability for house decoration, its delightful fragrance, and its adaptability to a great variety of soils and positions.

All that can possibly be said against the Paeony is that it takes time to become thoroughly established, and that its season of flowering is relatively short, but even on these points there are compensations, for once established it is truly perennial and gives little further trouble for a number of years, and after the season of flowering is over, its massive foliage is not lacking in beauty and takes on brilliant tints of orange, scarlet and crimson in the autumn.

As already noted, the Paeony is adapted to a variety of positions, and is equally attractive as a specimen in the herbaceous border, in beds on the lawn, as single specimens in the front of the shrubbery or in bold groups in the woodland garden. In these days of special gardens, too, a section might be devoted to Paeonies and, with the large amount of material available, the Paeony garden might be made a highly attractive and interesting feature. Such a garden could be enclosed with a Yew hedge, and would present a magnificent spectacle in June and July, and if late summer or autumn colour is desired, Liliums, such as L. auratum, L. speciosum, L. Henryi and L. pardalinum could be planted between the Paeonies. The foliage of the Paeonies, with the Lily flowers overhead, would make a pleasing combination, and neither need be disturbed for a number of years.

Reference has been made to the adaptability of the Paeony to a great variety of soils, but as the plants usually occupy their quarters for a long period without disturbance, it is essential that thorough preparation should be made for them. A good, medium, deeply-worked loam suits them best, and on soils of a light nature heavy dressings of organic manure should be incorporated with it before planting. The massive foliage denotes that they are rank feeders, and established plants should be fed regularly to maintain their vigour. A top-dressing of rotten manure forked into the surface soil early in the year is very beneficial or, failing that, a dressing of bone-meal may be given.

The number of beautiful varieties is so great that it would need a long list to include all the best, but there are sufficient to meet every possible taste in both the single and double sections, the colours ranging from the purest white through every shade of cream-pink, and rose to the deepest crimson. *W. Auton.*

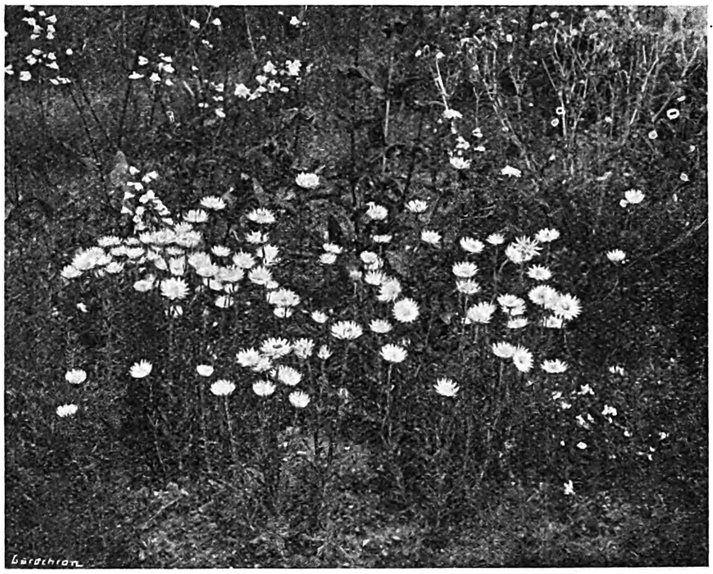


FIG. 212.—HELICHRYSUM BRACTEATUM.

ALPINE GARDEN.

ANDROSACE CARNEA.

At one time regarded as difficult plants to cultivate in our gardens, it is now recognised that quite a number of the Androsaces, or Rock Jasmines present as little difficulty as the majority of other alpine flowers. Some, it is true, require protection from wet in winter in localities with a heavy winter rainfall, but in dry parts of the country where properly planted this is not necessary. Androsace carnea, however, does not require even this, and it has been cultivated successfully even in wet localities without anything to throw off the rain.

It is a most attractive little Rock Jasmine, which will flourish either in the crevices between the rocks or on a level or slightly sloping part of the rock work, where it is planted in light, peaty soil with plenty of grit and the freest drainage. There it should spread into little lovely low cushions or mats composed of small, bright green foliage with hardly any hairs except on the edge. On this are set the lovely pale pink flowers, elevated on stems two or three inches high, and presenting, in association with the emerald of the leaves, a combination of perfect charm.

The precise shade of pink varies in different plants, some of which have been dignified with specific or varietal names, although this seems rather superfluous where the plants naturally vary greatly. One of the finest of these is that called A. carnea Laggeri, or, very frequently, simply A. Laggeri. This is dwarfer and neater in its deeper shade of green foliage, and is made more precious by the increased brilliancy of its pink flowers, which are in addition, more lavishly borne on the plant. A. carnea eximia is also a charming and brighter-coloured variety now quite scarce in gardens.

MODIOLA GERANIOIDES.

It is a little puzzling to ascertain the exact title of the little plant which I have known under two or three names, but which I have lost sight of for some years, although it is still in commerce. Forty or more years ago, I purchased it under the above name, but afterwards saw that it was said to be synonymous with Malvastrum Gilliesii. Then the *Kew Handlist* recorded it as Modiolastrum geranioides, a title which I could not find in the original volumes of the *Index Kewensis*. A reference to the various entries in the latter work does not help one much, as Malvastrum geranioides and M. Gilliesii are both given under the heading of Malvastrum. Mr. Reginald Farrer retained the name of Modiola geranioides, which I am also employing, in writing of this plant. This information may be said to be purely academic, but it is important that intending purchasers of a plant should know by what titles it may be found in lists, and it is exceedingly annoying to find such differences in the nomenclature of such a pleasing little plant.

Modiola geranioides came to me originally from Messrs. Barr and Sons, and was appreciated by the writer and his friends who were interested in rock garden plants. It gave much pleasure with its trailing habit, its pretty, divided leaves and its numerous, carmine-cherry-coloured flowers of medium size. It proved an excellent plant for the rock garden, and had only one failing, though this was a serious and disconcerting one. It did not appear able to resist a severe winter in our climate. After a year or two it died, and many replacements which I made afterwards in this and other gardens met with the same fate under similar conditions during the winter months.

It is not difficult to understand why this Modiola, or Modiolastrum, should be tender, as it transpires that it is a native of Chili, though Mr. Farrer said that it was a native of North America. Yet I feel pretty confident that there are many rock gardens in the milder parts of the British Isles where, at least in warm, sheltered positions, it can be grown with success and will prove hardy. It loves a light, well-drained soil, and not only for its scarcity, but also for its beauty, it merits the consideration of those who are about to plant alpine flowers. *S. Arnott.*

INDOOR PLANTS.

ANCHUSAS IN POTS.

The varieties of Anchusa italica are very useful for cutting or grouping when grown in pots. One-year-old plants are the most satisfactory, and they should be potted now in eight-inch or ten-inch pots, according to the condition of the roots. A compost of rich loam and sufficient gritty material to make it porous suits them well. The plants should be grown under cool conditions in a greenhouse where frost is excluded. Liberal feeding may commence when the flower spike has formed. *S. Bowler, Ford Manor Gardens, Lingfield.*

CYRTANTHUS MACKENII.

I make no hesitation in stating that Cyrtanthus Mackenii is a plant which deserves to be more widely grown. In fact, there is no reason why it should not become as popular as the Freesia, which requires identical cultural requirements. Plants which provide us with flowers at Christmas — as this does — are always welcome, especially if they are suitable for cutting for room decoration.

C. Mackenii is a bulbous, Amaryllidaceous plant, which has long, white, tubular, sweetly-scented flowers. They are about two inches in length, half-an-inch across the top, and taper off to a very narrow tube at the apex of the ovary. The perianth tube is curiously twisted, from which characteristic the plant derives its generic name, *kyrtos*, meaning to curve, and *anthos*, a flower.

As a general rule there are about half-a-dozen flowers in an umbel on a long, stout flower-stalk that carries them well above the narrow, grass-like, arching foliage.

I first became acquainted with the possibilities of this Cyrtanthus when visiting the garden of a friend who made a speciality of its culture. At that time he had a large batch of plants in five-inch pots, and as these were in full bloom they made a remarkable and impressive sight. My friend informed me they were not difficult to cultivate, and that very little fire-heat was required to induce them to flower during the winter.

Increase is rapid, as offsets are freely produced, so that a large number of plants may be quickly obtained. The bulbs—which are similar in size and shape to those of the Jonquil—should be potted up in September, using a compost consisting of two parts of turfy loam, one part of leaf-mould, and sufficient silver sand to ensure porosity. Six bulbs are sufficient for a five-inch pot, and they should be planted so that their tops are just above the surface of the soil.

After potting, stand them in a cold frame until well rooted, when they should be placed in a slightly heated greenhouse. As Cyrtanthus Mackenii is a native of South Africa, it is best to grow it under cool conditions, otherwise the flower-stalks will become weak and unable to properly support the inflorescence.

After flowering, it is necessary to feed the plants occasionally with a complete fertiliser, until March, after which they should be gradually dried off previous to resting them entirely during the summer.

C. Mackenii was introduced to this country in 1774, and is figured in *Bot. Mag.*, t. 335. *G. F. G.*

GLADIOLUS COLVILLEI THE BRIDE.

Where quantities of choice flowers are in demand during the spring and early summer months, Gladiolus Colvillie The Bride is indispensable. The pure white flowers, produced in long, slender sprays, are admirable for all kinds of decorations, and when grown in five-inch pots the plants are exceedingly useful for the embellishment of the greenhouse and conservatory.

The corms may be obtained during October when an early batch should be potted. Almost any rich soil will suit them; good loam, with the addition of one-sixth of old Mushroom-bed manure and some good coarse sand is an excellent compost.

After potting, plunge the pots in a bed of leaves or Coconut fibre refuse in a cold frame. If the soil is in a moist condition at potting time no water will be required until growth appears above the soil. The pots should then be removed to a light position near the glass in a house with a temperature of 50° to 55°, and when the growths are two inches high they may be subjected to a slightly higher temperature.

Abundance of water is necessary at all times; and weak stimulants may be applied so soon as the flower spikes appear. The foliage will require the support provided by a few small sticks or twigs.

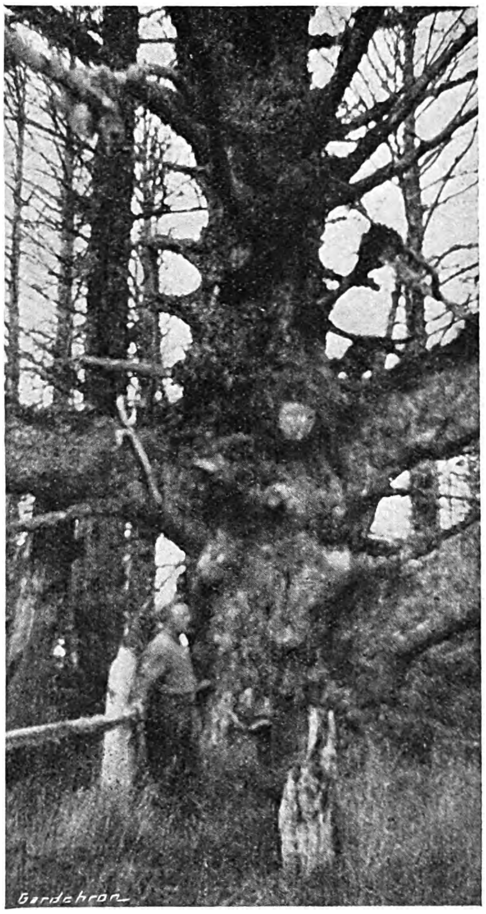


FIG. 213.—LARGE SITKA SPRUCE, DEAD, BUT WITH POLYPODIUM SCOULERI ALIVE ON IT; JANSEN'S ISLAND, BRITISH COLUMBIA.

After flowering, the plants should be gradually hardened off and plunged outside, and supplied with water and stimulants until they ripen naturally. Corms treated thus will be in grand condition for potting in the following September to produce an extra early batch for the next year. Corms from which flowers have been cut are of no further use.

This Gladiolus is perfectly hardy and increases freely in the open ground, where a constant succession of blooms may be kept up from March until the end of August.

STRIKING ZONAL PELARGONIUM CUTTINGS.

The majority of gardeners strike cuttings of Zonal Pelargoniums under conditions entirely different to those in which most soft-wooded subjects are rooted, and to me it has been a frequent cause of wonder why this should be so. After the cuttings are made it is quite usual to insert them near the sides of pots, or in boxes, water them in, and then place the receptacles in a frame where little or no protection from sun is afforded. The soil is kept barely moist, water being given only when absolutely necessary until such time as roots are emitted.

Some gardeners carry this method to even greater lengths and after the cuttings are made they will leave them lying about for twenty-four or even forty-eight hours "to dry off," before insertion, and then, if it is early enough in the season, will stand the pots of cuttings out in a sunny position in the open. The explanation usually offered in defence of this procedure is that "Geranium" cuttings are of a sappy nature, and by this means some of the superfluous sap is dried out and consequently the cuttings are not so liable to damp off. The same idea prevails in regard to withholding water from the cuttings when they are inserted, and, indeed, this is very necessary if a successful "strike" is to be obtained from material propagated in this way.

Personally, I have always failed to see the advantage of "drying off" the cuttings before insertion, for it seems that immediately they are placed in moist soil they commence to absorb moisture until the plant cells regain their former turgidity. The only possible advantage to be gained by this method, so far as I can see, is that in the process of absorbing moisture the cuttings swell somewhat and thus tighten themselves in the soil. Even when great care is taken an indifferent "strike" frequently results, and this is especially noticeable when the growth is soft and sappy, as is the case after a wet season such as we have experienced this year.

Quite recently I have discovered that Pelargoniums may be rooted in a far more certain and expeditious manner. It is the practice here to root cuttings of all such soft-wooded plants as Ageratum, Petunias, Iresine, Coleus, Marguerite, Heliotrope, etc., in close propagating cases, the rooting medium being clean, sharp, silver sand. In September we inserted several distinct lots of zonal Pelargoniums, and one batch in particular was extremely sappy, the plants from which the cuttings had been obtained having been grown in a shaded, moist, situation in an enclosed garden. They were given exactly the same conditions as the other occupants of the house, that is, they were shaded from bright sun and sprayed over during bright weather. The sand was kept constantly moist and the atmosphere heavily charged with moisture. The temperature of the house was always high, and in sunny weather it often reached 100° F. In ten or fourteen days from the time of insertion the cuttings were well rooted and ready for potting. After this potting it is essential to place them in a warm, close, house for a few days until they take hold of the new soil, when they may be moved to cooler quarters with safety.

Of a large number of cuttings almost one hundred per cent. rooted and at a time no bottom heat was available.

I have seen cuttings taken from stock plants in the spring treated in this manner with great success, and as it appears to possess decided advantages over the better-known British method, I certainly think it is worthy of trial by those whose business it is to propagate large numbers of bedding Pelargoniums and who have the necessary conveniences. *T. H. Everett, New York, U.S.A.*

ORCHID NOTES AND GLEANINGS.

BUTTERFLY ORCHIDS.

The singular appearance of its flowers has always invested Oncidium Papilio with more than ordinary interest. The specific name is apt, for if an inflorescence be held in the right position, the floral resemblance to a butterfly is very striking, while the bizarre colouring intensifies the similarity between flower and insect.

The flowers are solitary but produced successively from the same peduncle by elongations of the joint immediately below the ovary; the linear dorsal sepal and petals, slightly dilated at the apex, and three to four inches, or rather more, in length, are dull, brownish-red on the face and yellowish-green at the back. The lateral sepals, decurved and undulate, are bright chestnut-red, with transverse yellow markings. The three-lobed lip has small side-lobes, rounded, yellow and spotted with red, while the anterior lobe is sub-orbicular, large and yellow, with a broad, marginal band of red.

This remarkable and very handsome Orchid was introduced from Trinidad in 1824, by the then Governor, Sir Ralph Woodford, and the first flower has produced in Colville's Nursery, at Chelsea, during the following spring; a fine form is that known as majus or giganteum—a glorified variety.

O. Kramerianum differs from the foregoing species in its more orbicular and generally smaller pseudo-bulbs (the pseudo-bulbs of O. Papilio are oval-oblong or sub-orbicular, usually one-and-a-half-inch to two inches long, compressed and wrinkled), shorter and less profusely spotted leaves (the broad, coriaceous leaves of O. Papilio being dull green and mottled with purplish-crimson). The peduncles are shorter, while those of O. Papilio become two feet to four feet long under congenial conditions. The floral colouring is similar to that of its congener, but differently distributed. Oncidium Kramerianum was first detected by Warscewicz, in Ecuador, at 3,000 feet elevation, about the year 1852; the species was first flowered in the garden of Herr Jenisch, at Hamburg, after whose gardener, Kramm, it was named.

O. Limminghei has a close affinity with the aforementioned species; the chief superficial dissimilarity is the absence, or comparative absence, of elongation of the dorsal sepal and petals, while the leaves are usually procumbent. This Oncidium first flowered in the Botanic Garden at Liége, in 1855, the plants being sent from Caracao by the Dutch Consul of that port; the plant is dedicated to Comte Alfred Limminghe, a liberal patron of Belgian horticulture.

O. Limminghei is a very much smaller plant than O. Papilio and O. Kramerianum and, like those species, it will thrive in an intermediate temperature, in baskets or pans containing a compost of fibre and Sphagnum-moss.

When flowering in a public collection of Orchids, such as at Kew, Edinburgh and Glasnevin, the Butterfly Orchids invariably arrest attention, and when they are exhibited at either major or minor flower shows they create a great deal of interest. *A. C.*

DAMAGE TO SITKA SPRUCE IN BRITISH COLUMBIA.

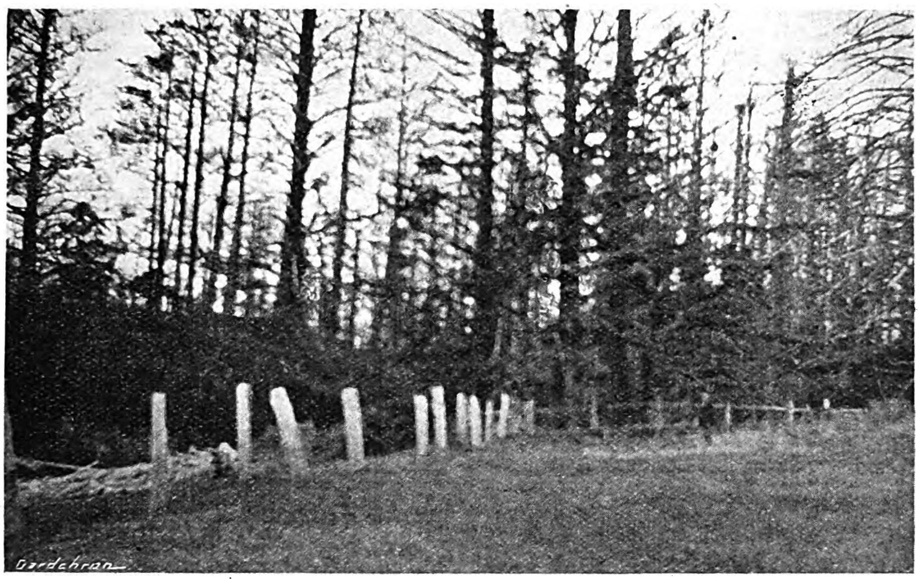


FIG. 214.—DEAD SITKA SPRUCE TREES; SOUTH-WEST SIDE OF JANSEN'S ISLAND, BRITISH COLUMBIA.

In *The Gardeners' Chronicle* of July 29, 1922, page 70, a communication from me was published describing the effects of a blight which in the winter of 1919-20 injured and killed many of the Sitka Spruce trees along the water front, for a distance of ten miles on each side of Amphitrite Point at the western entrance to Barclay Sound, Vancouver Island, British Columbia. I stated that along the immediate waterfront the trees consisted about equally of Sitka Spruce or Tideland Spruce (Picea sitchensis), Cedar, Thuya gigantea and Western Hemlock (Tsuga Albertiana, syn. heterophylla), but only the Sitka Spruce were injured and killed.

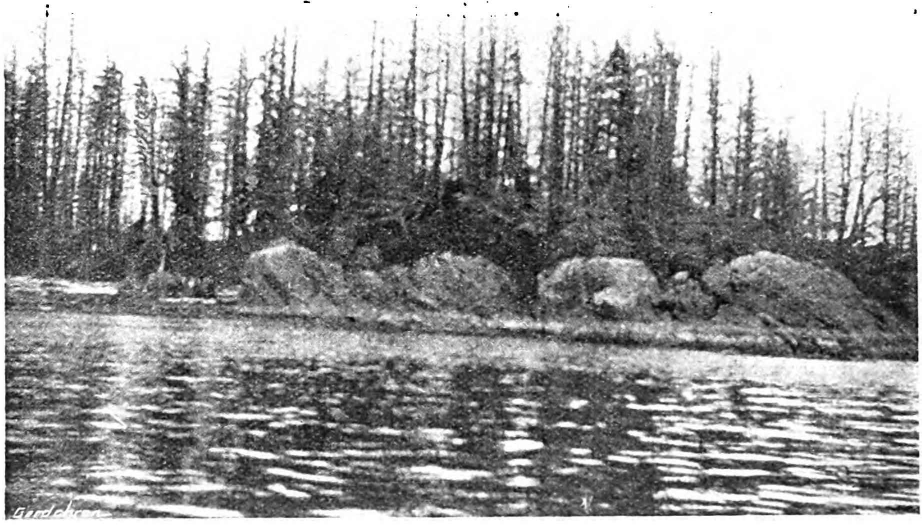


FIG. 215.—DEAD SITKA SPRUCE TREES; SOUTH SIDE OF JANSEN'S ISLAND, BRITISH COLUMBIA.

Since then, in the vicinity of Ucluelet, where I am writing, the younger trees have regained their foliage, but on Shelter Islands, a small, rocky group of some forty acres extent, situated about two miles east of Amphitrite Point, where all the trees are Sitka Spruce, the blight must have been more severe, for practically every tree is dead, and some were grand, rugged specimens which to all appearance had lived for several hundreds of years. I enclose photographs (Figs. 213, 214 and 215), taken by me on September 26, of portions of Mr. Jansen's Island, the largest of the Shelter Island group, and twenty-two acres in extent, which, with the exception of a cultivated acre or so in the south end, is original forest. The illustrations give some idea of the catastrophe, as all the trees shown, except four or five spindly saplings, are dead.

The first demonstration on record of this particular type of blight was in Stanley Park, near the city of Vancouver, a hundred miles east of us, when the foliage of the Sitka Spruce was injured there in 1913 or 1914.

There was a third outbreak noticeable in Ucluelet on August 20, 1922, when the foliage of both young and old trees turned brown as if infested by red spider.

Some idea of the extent of this third injury, geographically, was obtained from Mr. Bevan, C.E., who at the time reported its presence as very evident all along the water-front of Quatsino Sound, a hundred-and-sixty-five miles west of us, and now Mr. W. F. Gibson, who is commercially interested in Sitka Spruce, and has returned from a visit to Kyuquot, half-way between here and Quatsino Sound, reports that in some situations along the water front in Kyuquot Sound and westward, more than half the trees are dying or dead.

As a result of my former communication in *The Gardeners' Chronicle*, the Forestry Branch of the Department of Lands for British Columbia collected specimens, in 1923, from the injured trees in this district, and on examination inferred that the injury was the work of an aphis described in 1919 by Mr. Wilson as Lachniella Vandykei, Wilson, from material collected in Washington by Dr. E. C. Van Dyke of the University of California, on Tideland Spruce.

No doubt there are all kinds of insects on the West Coast Spruce, but the catastrophe on Shelter Islands would appear to be due to other causes. Polypodium Scouleri is not damaged, and the luxuriant undergrowth of Gaultheria Shallon is unharmed. *Geo. Fraser, Ucluelet, B.C.*

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NOMOCHARIS.

THE many clever gardeners to whom the cultivation of the Nomocharis genus is a perplexing problem will be interested in the reproduction (Fig. 216) of a photograph Mr. Kenneth McDouall has kindly sent me of a colony of N. Mairei—as the old N. pardanthina of the Tali Range is now called—in his garden at Logan, in Wigtownshire. The plants have been raised from home-saved seeds and are now three years old; like those of the older colony in the same garden, which have already been referred to in *The Gardeners' Chronicle*,[*] they are growing in deep loam, which, if not always moist, is never dry; at the same time it is thoroughly drained.

The older colony has been established since 1921, when bulbs raised from seeds of Farrer's collecting in 1919 were planted out. These bore their first flowers in 1922,[†] and have bloomed annually since then. Latterly, self-sown seedlings have appeared. Mr. McDouall tells me that during the past summer one of the old plants reached a height of four-and-a-half inches short of five feet, and bore fourteen blooms, with fruit into the bargain—a remarkable feat for a species whereof the bulb is no larger than that of Lilium tenuifolium. Evidently, in its way, this Nomocharis responds to cultivation as well as Lilium auratum, for like that Lily in its native hills, wild plants of Nomocharis are not usually prodigal of flower. Uni-flowered specimens predominate, and those with three or more flowers are rare. It is as well that in this country the bulbs of Nomocharis do not go down so deep into the ground as the stem is high, like the bulbs of the wild Nomocharis described by Mr. Cox in *Farrer's Last Journey*,[‡] though the fact that seedlings may be found at the bottom of the pan shows that they have not altogether lost their burrowing habit.

The success of the Logan experiment should encourage other gardeners to persevere in the cultivation of this baffling genus, and though, for reasons unknown to us, the conditions on the west side of Wigtownshire are obviously favourable to the acclimatisation of Nomocharis Mairei, it is not to be supposed that it cannot be cultivated elsewhere in Britain; indeed, it is known to grow in very different surroundings, as in Mr. Harley's garden in Perthshire, for instance, and at the Edinburgh Botanic Garden. To anyone who gives a moment's thought to the subject, these two places might seem likely to be rather more favourable to the growth of a genus of which the natural home lies at about the 13,000 feet level on the alps of Western China, than the shore of the Mull of Galloway; but the fact that Nomocharis flourishes in surroundings so utterly different from those in which it grows naturally is of good augury for cultivators. Incidentally, it affords but one more instance of the amazing adaptability of plants.

A point about the Nomocharis at Logan is that Mr. McDouall finds no trace of the stoloniferous habit of the stem which Mr. Forrest has often noticed in wild plants of N. Mairei.

There seems no doubt that, like most Lilies, Nomocharis is a sun-loving genus, though rain can have no terrors for them, as they come naturally into bloom in the rainy season, hanging their heads normally, but lifting them up whenever the sun breaks through the clouds. It might be worth while to try a few bulbs in a meadow where Fritillaria Meleagris is established. *A. Grove.*

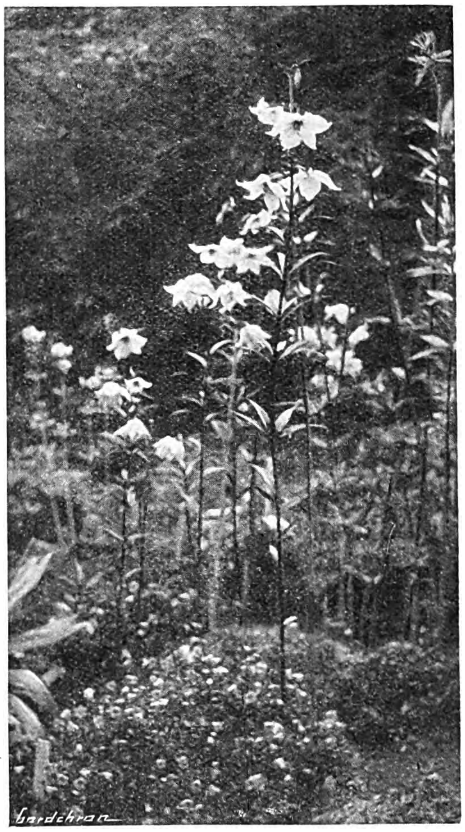

FIG. 216.—NOMOCHARIS MAIREI (N. PARDANTHINA) IN MR. McDOUALL'S GARDEN AT LOGAN.

CHILI AND THE ANDES.

No. III.—On the Way.

The run from Havana to Cristobal, the Atlantic port of the Panama Canal, occupied four days. We landed in late afternoon, and went straight out to see the famous Gatun Locks and Spillway, a seven or eight miles run of extraordinary beauty and interest. The country is hilly and densely clothed with rank tropical forest, and we caught glimpses now and then of winding lakes and lagoons lying in the hollows. On the higher ground were colonies of the dwellings of the canal workers, neat and trim, in well-kept, unfenced gardens, and looking like meat-safes, with every door and window securely gauzed against flies and the deadly mosquito. The soil everywhere was a livid red colour and contrasted strangely with the rich green vegetation. For a mile or two the road ran close to the old original canal of de Lesseps'—a sad, abandoned failure it looked beside its highly successful Yankee successor, yet it was beautifully picturesque, its waters stained a deep orange by floods, and its banks festooned with every sort of fantastic tropical glory.

I had always vaguely imagined that the Panama Canal consisted of one great continuous ditch from the Atlantic to the Pacific, and it was only when I viewed it from the Gatun Locks, which lie a few miles in from the Atlantic entrance, that I realised that the central portion of the canal is not a canal at all, but an artificial lake. The engineers constructed a dam, 8,000 feet long and 2,600 feet wide, and thus flooded a tract of country and converted it into a vast lake. The overflow from the lake is near the Gatun Locks, a terrific Spillway whose water-power generates the electricity by which the locks are operated and the whole district lit.

The gently undulating slopes of the Atlantic side of the Gatun dam have been converted into a fine golf course, across which we walked from the locks to the Spillway. The greens were in beautiful order, and appeared to be produced by frequent sowings of seeds. The grass had a fresh, young, impermanent, look. In the fairways it was interesting to see growing two plants not usually associated with golf courses—a Selaginella and the Sensitive Plant (Mimosa pudica), the latter mown or rolled to a prostrate habit. Here, too, we watched the leaf-cutter ants at work, each ant carrying a slab of green leaf very much bigger than himself, or a length of green grass, almost an inch long and carried upright. They were marching upon regular roads which they had made across the turf, hard and smooth, several inches wide, leading to their underground habitations, the entrances to which were like miniature craters. The cut leaves and grass are carried below and stacked into what might almost be called hot-beds, or Mushroom-beds, on which the ants cultivate a species of fungus which they use as food. These leaf-cutter ants often do terrible damage to crops, cutting the plants to shreds.

Near the golf course we found trees of Cecropia, and were able to study the fierce little ants who inhabit the hollow stems of this tree, and defend it from the attacks of the leaf-cutter ants. In the wall of each hollow internode of the stem is a thin spot, and in each of these thin places the ants make a hole, into and out of which they can pass. We snapped several stems, and instantly the tiny ants rushed out and dashed around, very angry. The Cecropia produces food bodies at the bases of its leaf-stalks, on which the defending ants feed. We noticed one or two young Cecropia trees whose leaves were very ragged and had been much cut about, and in every instance we found, on testing them by snapping the stems, that no ants rushed out. Evidently something had happened to the defending army, and the leaf-cutters had taken the opportunity of robbing the leaves. Every Cecropia which we examined whose stems were inhabited by the tiny, defending ants, had perfect leaves, untouched by leaf-cutters.

In a few of the gardens of the canal zone we noticed an exceedingly handsome flower, a Composite, probably an annual, and looking much like a Cosmea. This grew from three to four feet high, and the flowers, very solid in texture, were a superbly rich orange colour. We saw the same thing as a cut flower at the Washington Hotel that evening, and made urgent enquiries as to what it was, or when seeds could be obtained, but got nothing but vague negatives. Late that night, just as we were going on board, panic thoughts of that orange Cosmea held us, and in a tiny trap we ambled back to the Washington to make our last effort to secure a seed, or news of where a seed might be had. It was very late, but we found and interviewed a really very important hotel official, who, however, was a perfect miasma of vagueness. Finally, we raided the hotel garden, and by a reckless display of matches discovered not only a bed of orange "Cosmea" in flower, but a few reasonably small seedlings, which we dug up and carried off. Our idea was to nurse these through to Valparaiso, where, in a garden, they were to flower and produce seeds to send home to England. They were all dead in three days!

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[*] February 5, 1927, p. 99.

[†] Not 1923, as reported in *Gard. Chron.*, Feb. 5, 1927, p. 99.

[‡] p. 89 (1926).

Next day we passed through the canal. It was, of course, intensely interesting, but this is not the place to write of an engineering triumph. I cannot refrain, however, from remarking on the superb organisation which takes great ocean liners through those immense locks, lifts them some seventy odd feet in a few minutes, and passes them quietly out into the lake above, without a shout, with scarcely a word spoken, and with barely a drop of water splashed. The locks are in a setting of trim, shaven lawns. The authorities charged, I was told, between two and three thousand pounds for taking us through the canal, but they did it handsomely and with consummate efficiency.

The lake section of the canal is extremely picturesque. The country is, in contour, rather like the Trossachs, but the low, rounded mountains are clothed in dense tropical jungle, and the lake goes winding away for miles in deep romantic inlets between the hills and is further broken by countless islands, large and small. When the lake was made, by flooding, thousands of trees which originally grew on dry land found themselves standing in the new water, some half submerged, others up to their knees, so to speak, and there they still stand, dead and drowned, melancholy skeleton trees, with strange epiphytic plants clinging to their trunks, and small, grey pelicans perching on their rotting branches.

The last section of the canal, the Culebra Cut, gave us an interesting view of its vegetation and its fauna at close range on either bank as we sweltered slowly through. A Musaceous plant, looking like a giant Strelitzia, with splendid scarlet flowers, grew in enormous clumps at the water's edge. White egrets and a charming little blue heron trotted upon the shore, fearless alike of basking alligators and of passing ships.

Numbers of gaudy, sensational-looking hornets visited the ship, and now and then a splendid butterfly would flaunt across the decks. The heat was terrific, oppressive, in spite of zephyr clothing, electric fans and lunch served on the shady deck, with iced drinks, cooling fruits and sprightly music from the ship's orchestra. I found that the best way to endure the overwhelming swelter—at which some folk were inclined to wail—was to picture the first early Spanish conquerors hacking their way across this same isthmus *on foot in steel armour*. Stout fellows those old Spaniards! *Clarence Elliott.*

TREES AND SHRUBS.

RHODODENDRON SOULIEI.

This evergreen Rhododendron (Fig. 217) is a native of Western China, where, apparently, it covers large areas at an altitude of from 9,000 to 10,000 feet. It was introduced to this country in 1905 by Mr. E. H. Wilson, when collecting for Messrs. J. Veitch and Sons.

Free of growth and of good habit, it forms a fairly compact bush, three or more feet in height, the young growths being purplish, and covered with glands which exude a sticky substance. The leaves are quite attractive, being broadly-ovate in shape, from one-and-a-half inch to two-and-a-half inches long and one inch to two inches wide, with heart-shaped base and bluntly-pointed apex; they are glaucous-grey, smooth on both surfaces, and have short, glandular stalks.

The flowers of R. Souliei are produced during early May in terminal clusters of five or six, and they are a pale rose-pink colour. The corolla is saucer-shaped, usually five-lobed and about two-and-a-half inches in diameter.

Rhododendron Souliei usually produces its beautiful blooms with freedom, and it is quite hardy, so that it is a useful addition to our gardens, flourishing under conditions usually provided for Rhododendrons. *A. G. F.*

EUONYMUS EUROPAEUS.

A native shrub which can bear comparison, when in fruit, with many of the new introductions from Asia and elsewhere is the Spindle-tree (Euonymus europaeus). It is found in copses and hedgerows, chiefly in England, and more rarely in Scotland and Ireland, mainly on chalk or limestone formations. In its wild state it forms a bush ten to twelve feet high, but under suitable conditions it will make a tree up to twenty feet high.

It is a deciduous shrub, bearing oval to lance-shaped, glossy leaves, in pairs; when bruised, these give off a foetid odour, and the juice is said to be poisonous. The leaves have finely-toothed margins. The young twigs are green and four-angled, while the older wood is covered with smooth, grey bark, and in old specimens the trunk is usually furrowed longitudinally.

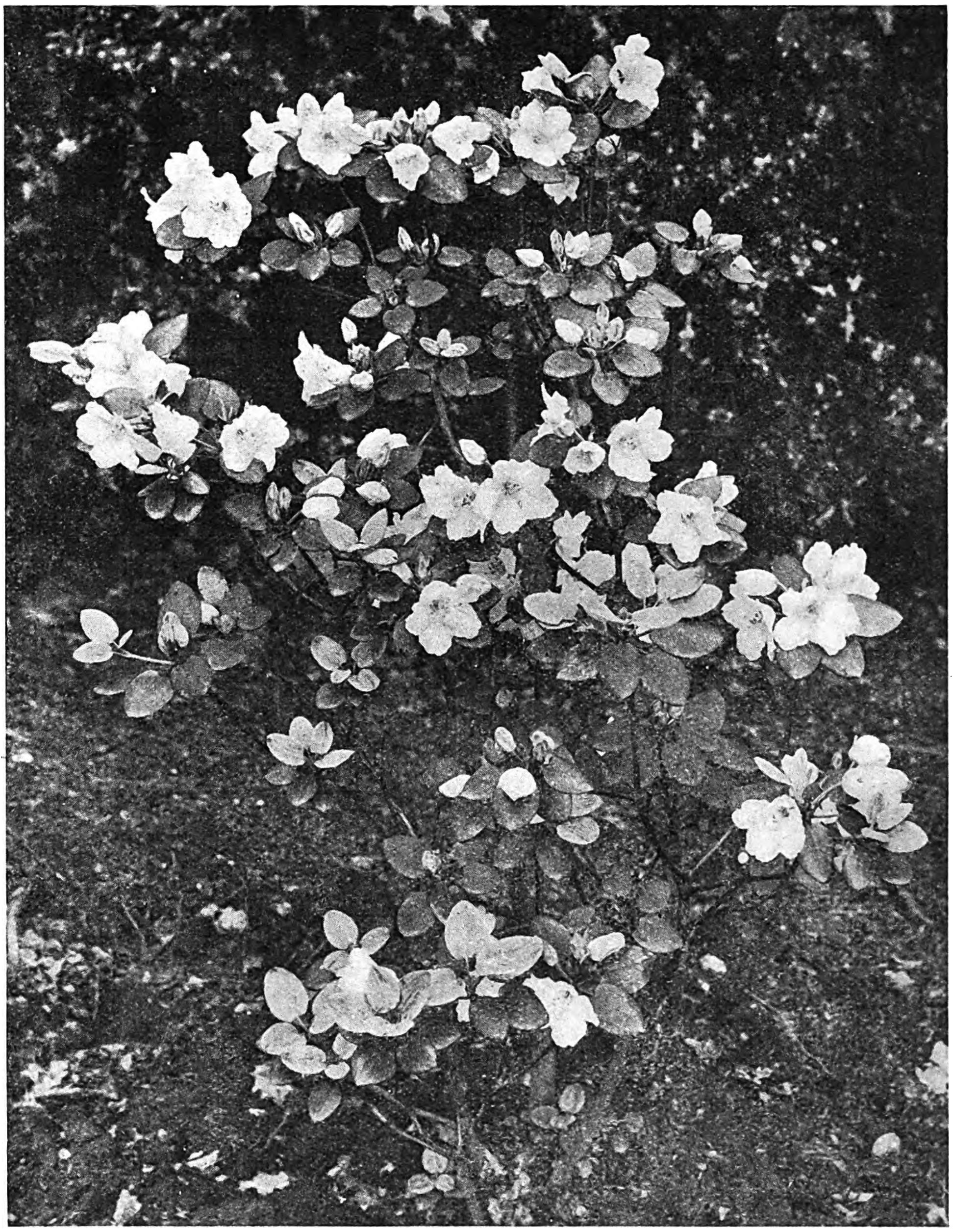

FIG. 217.—RHODODENDRON SOULIEI.

In the early part of the year the Spindle Tree may be confused with the Dogwood or Buckthorn, but in autumn, when the leaves have turned red and yellow and the fruits are ripe, there can be no doubt as to its identity. The flowers are small and greenish, borne in considerable numbers in loose cymes in May and June. The fruits are three to five-lobed and deeply grooved along the lines of division. The case itself is pale crimson, and each seed is wrapped in a bright orange arillode or envelope, providing a sharp colour contrast.

This shrub, if better known, would find a welcome in many gardens, with the other members of its family. It belongs to the Celastrus Order, and is thus closely related to the climber Celastrus articulatus, which fruits in the same fashion. *L. Le C. T.*

AZARA MICROPHYLLA.

Azara microphylla may well be considered one of the most attractive shrubs in cultivation in this country because of its extremely graceful habit of growth. Although a native of Chili it may be grown in the open in most districts, provided it is not placed in an exposed position. In warm districts it attains the dimensions of a small tree, from twenty to thirty feet in height, but usually forms a handsome bush about ten feet high, while in cold districts it requires the protection of a wall, a position for which it is admirably suited owing to the regular branching of the growths.

The slender branches are densely clothed with blackish down and thickly furnished with small, glossy, deep green leaves which are obovate in shape and usually have toothed margins. They are produced in pairs, the outer ones being much larger than the inner, which are more rounded. The flowers—the insignificance of which is amply compensated by their strong Vanilla fragrance, which can be detected some distance from the plant—are produced during February and early March in small clusters in the axils of the leaves.

There is a variegated form of this beautiful shrub which makes an attractive wall plant and seems to retain its variegation with age, the leaves being heavily marked with yellow.

Azara microphylla is fairly rapid in growth if planted in good loamy soil, and is propagated either by layering or by cuttings of ripened shoots inserted in a cold frame during autumn. *A. G. F.*

ERICA CILIARIS VAR. MAWEANA.

THIS is undoubtedly the finest of the Dorset Heaths, and a plant which stands out above all other late-flowering, dwarf Ericas. It was discovered in Portugal by the late Mr. George Maw, rather more than fifty years ago, and may be distinguished from the typical E. ciliaris by its shorter, more upright growths, by the darker green of its less glaucous foliage and more bushy habit. It is not so inclined to trail as the common Dorset Heath, and the flowers are a good deal larger, being fully half-an-inch long and proportionately wide. In colour they follow the type closely but are a somewhat deeper, and more crimson purple. This fine Heath is quite as hardy as the typical species, and with me it does very well in a moderately cool, freely-drained, lime-free loam. The flowering season extends from early August until November. *A. T. J.*

THE VALUE OF DECORATIVE FOLIAGE IN WINTER.

THAT foliage plays an important part in decorative gardening cannot be gainsaid, for even in summer our displays of flowers are incomplete without accompanying foliage, while foliage plants serve as a back-ground to many floral schemes, and greatly enhance the beauty of them.

In winter, when most outdoor flowers have vanished, foliage is the chief source of beauty in the garden. A stately Yew hedge is an admirable set-off to a large flower border in summer, and in winter it remains a thing of beauty. The Hornbeam or Beech hedge, with its totally different shade of green in summer, and its rich brown tone in winter has attractions at both seasons, and the foliage of a well-grown Holly hedge is a delight all the year round.

In the planting of deciduous trees and shrubs for permanent effects, the introduction of groups of subjects with coloured foliage to contrast with the green foliage of other kinds is of great assistance in rendering the shrubbery attractive after the majority of its occupants have passed their flowering stage. There is a large number of plants suitable for this purpose, and when planting one may visualise the rich red of Prunus cerasifera Pissardii and Acer palmatum sanguineum; the deep purple of Corylus Avellana purpurea and Rhus Cotinus purpurea; the bright yellow of Acer Negundo aureum, Catalpa bignonioides aurea, Ribes aureum, Sambucus nigra aurea and Cornus alba Spathii, and the silvery tones of Acer Negundo variegata and Cornus alba variegata.

But probably the evergreen trees and shrubs appeal most strongly to planters because of the important part they may be made to play in the winter landscape, and in this direction the Conifers are extremely valuable and offer a wide choice of subjects with golden, silver, grey or glaucous-tinted foliage.

The genus Cupressus is rich in golden and silver foliaged varieties, of quick growth and graceful habit, and many of the Lawsoniana group are particularly attractive. C. L. lutea, C. L. Westermanii aurea, C. L. Stewartii and C. L. Hillieri are all excellent golden plants. C. L. Allumii is one of the best "blue" varieties, of true conical shape and rich glaucous colour; L. C. Triomphe de Boskoop is of rather looser habit, and C. L. Fletcherii is a distinct, compact-growing variety with silvery-grey foliage. C. lusitanica argentea has very beautiful silvery-grey foliage, and C. macrocarpa lutea is a golden tree of remarkably quick growth. C. (Retinospora) obtusa has several golden varieties of merit, of which Crippsii is a beautiful plant of elegant habit. C. pisifera has also varieties of a good yellow colour, notably filifera aurea and plumosa aurea.

The genus Taxus also provides several elegant shrubs with golden and silver foliage. T. baccatus elegantissima, T. b. semperaurea and T. b. Standishii are excellent golden varieties, while T. b. alba variegata and T. canadensis Washingtonii are good silver varieties. The Irish Yew has gold and silver forms in T. b. fastigiata aurea and T. b. f. argentea respectively.

Many of the Abies are noted for their silver foliage, and they are commonly known as the Silver Firs. A. concolor, A. c. candicans, A. lasiocarpa coerulescens, A. nobilis glauca and A. Pinsapo glauca are noteworthy for their glaucous tints. Some of the Piceas are probably the richest of all in bluish-grey shades, P. pungens argentea being a strikingly beautiful plant, while P. p. Kosteriana and P. p. Moerheimii make fine specimens of an intense blue colour, beautiful when grown as isolated specimens, and still more beautiful when planted in conjunction with other evergreens which tend to accentuate their depth of colour.

Several other Conifers of considerable merit may be added to the material available for winter-colour schemes. Junipers include attractive golden and silver varieties. There are several Thuyas with rich golden foliage and some of the species of Pinus have more or less light-coloured foliage of a glaucous tint which contrasts with that of darker hue, while Pseudotsuga Douglasii glauca elegans and Tsuga Pattoniana glauca are two fast-growing Conifers, which soon make beautiful and graceful trees of a delightful soft grey shade. Cryptomeria japonica elegans is of distinctly ornamental value, the bright green foliage of summer turning to an attractive reddish-brown in winter.

Important as the Conifers are, however, in any planting scheme where winter-colour effects are the influencing factor, they by no means exhaust the list of suitable subjects for such purposes, for there is almost as wide a choice in other plants, mostly of a shrubby nature.

Ilex Aquifolium, the common Holly, has numerous golden and silver varieties which carry their brilliant colour throughout the winter; well-grown specimens of Golden King and Silver Queen are objects of outstanding beauty, useful in almost any position, while there are weeping forms of both varieties. The variegated forms of Aucuba are useful for winter colour, and grow freely even in the partial shade of other trees, though the colour is then less intense. Eleagnus macrophylla has attractive, silvery foliage and E. glabra folio-aurea is one of the most beautiful evergreen, golden-leaved plants we possess. Euonymus japonicus provides both golden and silver varieties of considerable merit, while E. radicans variegata is an excellent silvery-leaved prostrate shrub for positions where only dwarf plants may be used.

Cassinia fulvida (Diplopappus chrysophyllus) is a quick-growing plant of graceful habit with attractive, golden, Heath-like foliage, while of Buxus sempervirens there are golden and silver varieties. Even the much-maligned Golden Privet, Ligustrum ovalifolium aureum, rapacious as it is, is well worth growing for colour effect, and well-trained, rounded heads produce golden balls of an intensity of colour which few other plants can equal, while massive groups are very telling for distant effects.

There is a host of grey, silver and glaucous-tinted shrubs, many of which retain their attractive colour and are highly decorative subjects throughout the winter. The soft grey of the Lavender—Lavendula spicata; the intense silvery colour of the Cotton Lavender—Santolina incana; the subdued grey and green of the Rosemary—Rosmarinus officinalis; and the almost glaucous blue of the Rue—Ruta graveolens, are well-known, and all have their attractions. Many of the Artemisias have bright, silvery foliage and are very attractive, their colour being particularly good on light, dry soils. Several of the Senecios are also excellent grey-leaved plants, S. Greyii being probably the best of all, while Phlomis fruticosa, which succeeds in the poorest of soils, has effective, grey foliage. Other plants attractive because of their grey or glaucous foliage are species of Atriplex, Cistuses, Olearias, Teucriums and Yuccas.

Finally, the grasses include many highly attractive foliage plants, most of which are at their best during the late summer and autumn, but some of them carry their beauty well into the winter months. Gynerium argenteum is a strikingly effective plant in the autumn and early winter months, and bold masses by the water-side or on drives are highly decorative. G. a. aurea lineata is a handsome variety with rich, golden-striped leaves, and makes a fine lawn specimen. Elymus glaucus is a fine grass with almost blue foliage. Eulalia japonica variegata with foliage richly striped with silver, and E. j. zebrina, its deep green leaves carrying rings of yellow bars, are very effective plants that remain attractive through the winter but lose their lustre in the spring, when they should be cut down before they commence to grow again. Glyceria spectabilis folio-variegata is a golden-striped grass of brilliant colour and a rampant grower in a moist spot. Among other grasses that provide richly-variegated or striped foliage there are species of Dactylis, Festuca and Phalaris. The Phormiums are, unfortunately, not hardy everywhere, but they are amongst the most distinct and effective foliage plants we have, their handsome, glaucous leaves being attractive at all seasons, and they should be grown in favoured localities. *A. P. C.*

AUTUMN FOLIAGE.

AT the autumn season of the year brilliantly coloured foliage attracts the eye on all sides. The Maples, Hickories and other trees, whose leaves colour early, have shed their foliage, but the Oaks, the noblest group of trees in eastern North America, were at the height of glory very much later this year than is usual. The Scarlet, Red and White Oaks take on ruddy tints varying from reddish-purple and crimson to red. The Black and Swamp Oaks develop imperfect shades of orange to leather-brown tints. All the Oaks hold their autumn-coloured leaves longer than other trees and often we enjoy their colour from mid-October to mid-November. Where deciduous-leafed trees are associated with Conifers, the landscape effect in the autumn is immensely heightened. The contrast between the brilliantly tinted foliage on the one hand and the dark green of the Conifers on the other is very impressive.

One is often asked the why and wherefore of autumnal tints—a simple question not easy to answer, but briefly the metamorphosis is effected as follows: At the approach of winter, leaves, which cannot withstand frost, cease to function as food factories, and the residue food substances are conveyed from the leaf-blade into the woody branches and there stored, chiefly in the form of starch, until the season of growth recommences the following spring. The leaves from which everything useful has been transported form nothing more than a framework of cell chambers containing waste products, such as crystals of calcium-oxalate, which are thrown off with the leaves and help to enrich the soil. But while the process of food evacuation is going on other changes take place.

In many plants a chemical substance, known technically as anthocyanin, is produced in the leaves and often to such an extent as to become plainly visible on the exterior. In the presence of free acids in the cell-sap it appears red, blue when no acids are present, and violet when the quantity of acids is small. In a great many leaves the chlorophyll bodies, which contain the green colouring matter, become changed to yellow granules. Sometimes these yellow granules are few and anthocyanin is absent, then the leaf, except losing its freshness, exhibits little outward change before it falls. In others the yellow granules are abundantly developed, and if anthocyanin is absent or nearly so the whole leaf assumes a clear yellow hue. If there is an abundance of yellow granules together with free acids and anthocyanin the leaf assumes an orange colour. Thus the leaf at the period of autumnal change by the presence of these substances in a greater or lesser degree loses its green hue and becomes brown or yellow, crimson or orange, purple or red. *From the " Bulletin " of the Arnold Arboretum.*

THE CLAY-COLOURED WEEVIL.

The Clay-coloured Weevil (Otiorhynchus picipes, F.) is one of our most serious plant pests; in common with most of our coleopterous pests, it does harm during two stages of its life history, the adult weevil feeding upon the aerial parts of many plants, and the larval stage feeding upon the roots of a wide range of subjects. The double damage it is capable of is rather important, because we are so apt to take notice of the more obvious trouble and overlook the more obscure workings of this weevil. The damage done by the adult weevil is, of course, frequently noticed, simply because it can be seen on the aerial parts of the host plant, but the larval damage to the root system is frequently overlooked altogether.

Two other features also qualify O. picipes as a serious pest. One feature is that the insect is very generally distributed, while the second is that it is a general feeder. The weevil is common in all types of soil, and it is certainly not confined to gardens; it may be found in the pleasure grounds, parks, woods, fields and hedgerows, and seems equally happy in all. With regard to its feeding habits, it would seem almost the easier plan to list those plants it has not been recorded as feeding upon. The adult weevil will eat the aerial parts of most fruit trees and shrubs, and is also recorded as feeding upon many kinds of vegetables and some field crops. I assume that the larval stage can feed on almost any kind of root.

Damage by O. picipes is perhaps mostly noted on Raspberries, Loganberries, Roses and worked nursery stock, and the damage is often serious upon Red Currants, the Flowering Currant and Apple trees. Fruit trees of all kinds trained upon walls often receive a good deal of attention, especially if the walls have many crevices which serve as hiding places during the day. Ornamental shrubs are favourite hosts of this weevil, and all kinds of Rhododendrons as well as the Cherry Laurel (Cerasus Laurocerasus) are very prone to attack; the damaged foliage of these puzzled me for a long time, but a chance look beneath some clods of soil near some disfigured Rhododendrons revealed Otiorhynchus picipes. Since then, I have examined very many Rhododendrons and Cherry Laurels, and whenever damaged foliage has been found by day, these weevils may be found at night. Weevils collected and brought home and fed with whole Rhododendron or Laurel leaves produced the same type of damage.

The life history of O. picipes is as follows:— The adults appear in spring and at once commence to feed upon the various host plants. Towards the end of the summer the females begin to deposit their eggs in the soil beneath the plants upon which they are feeding. The eggs are small, round, and of a whitish colour when newly laid, but they turn a very dark brown before hatching; under artificial conditions the incubation period appears to be about twenty-one days. The grubs are white with hairs scattered over the body, and the head is brown, and the mouth parts shaped for biting; this stage of the pest lasts throughout the winter, and the grubs may be found in the soil, lying in a curved position, and appear to have very limited powers of locomotion.

When fully grown, they measure up to a quarter-of-an-inch in length, and when this period is reached the grubs make an earthen cocoon very near the top of the soil. In this earthen cocoon they change to creamy-white nymphs, and all the parts of the adult weevil can be clearly seen. In captivity the nymph stage occupies about three weeks, but may be speeded up by keeping the specimen under warmer conditions, which rather points to the fact that soil temperature would have a good deal of influence upon the length of the pupae stage.

It is recorded that the adult weevils may be found so early as April, but that the majority appear in June and July; this may be due to the fact that after the egg-laying period many of the adults hibernate for the winter. I am of the opinion that the early specimens are those left over from the previous year and which have sheltered for the winter. The majority mentioned above as appearing in June and July are in the main the new generation. I find that many adult O. picipes, collected in July and fed upon Apple foliage so long as it could be obtained will live all the winter, and will commence to feed upon young Apple foliage so soon as it can be obtained in the spring; whether or no these over-wintered adults are capable of laying another batch of eggs, I have not yet been able to determine.

The control of this weevil presents many difficulties to the gardener. In the case of the adults, trapping in some form or the other seems to be most successful. Advantage should be taken of the fact that they feed at night and hide by day. I find that my best results are obtained by breaking up all lumps of soil beneath the attacked plants and then putting hay-bands around the collars of plants which lend themselves to this treatment. In other cases, heaps of hay are placed as near to the infested plants as possible. The hay-bands, or hay-traps, are examined daily if time permits, and in any case not less than twice a week. The weevils are collected by hand and destroyed.

I once had what I thought to be a great idea. O. picipes was doing a great deal of damage to the leaves and flowers of some standard Apples, and my idea was to put a grease band in position so that the weevils would be trapped when crawling up the branches; but it would appear that I had very much underestimated the intelligence of this weevil, because although I used many grease bands, never once did I trap a weevil. I thought at first that my failure was due to the fact that when weevils are feeding on this class of subject they do not descend to the soil, but hide by day in the bark crevices, until darkness comes again. To get over this difficulty, I cleared a tree to the best of my ability of all weevils, and I was surprised to find that I still caught none on the bands. At the same time, the damage to the tree practically ceased, which indicated that I had shaken down most of the weevils and no more were going up. If the fact always holds true that O. picipes will not cross a grease-band, it should be a good control to put such a band in position before the attack starts. This, of course, is only possible on a few of the host plants favoured by this weevil. Many other trials, too, would be necessary before one could state such a fact with any degree of certainty.

The larval stage, when it takes place upon certain host plants, lends itself rather well to control measures. Under all conditions, where a good soil insecticide can be worked into the soil during early spring, it should be possible to kill many larvae. I have used naphthalene at the rate of two ounces per square yard with a good deal of success in this connection. A set of conditions where this method is useless is where potted plants are infected with the grubs of O. picipes. I have a case in mind where some thousands of various rock plants potted in three-inch pots were badly infested with grubs. The only control measure short of burning the stock was to shake out the plants and destroy the grubs, but some rock plants resent root disturbance, apart from the labour involved. We are badly in need of a fluid which could be used to kill this class of grub without injuring the growing roots, and at the same time at a price to allow of economic application.

The pupal stage of O. picipes is the weakest stage in its whole life history, and it is probable that a soil insecticide, as mentioned above, in connection with the larval stage, if used during the pupal stage would help to control the pest. Soil cultivation during this delicate pupal stage would destroy many, for the slightest touch seems to injure the nymphs, and as they are mainly situated in the top two inches of soil, the Dutch hoe should be used freely, especially beneath shrubs. *Somerset.*

NOTES FROM WISLEY.

Although the recent combination of frost and fog may have kept many garden lovers indoors, the charm of the garden has by no means been completely eclipsed. Under such conditions new effects are produced. For example, the blotting out of certain well-known features may give prominence to others which have been overlooked, and may form a hitherto unrecognised picture. The appearance of the plants themselves also is in many cases completely altered, and their character is emphasised in a pleasing way by the hoar frost which clings to the foliage.

In the fog and frost which prevailed when I last visited Wisley some of the most attractive effects of this nature was noticed among the Berberis hybrids belonging to the Wilsonae and polyantha groups. Their coral berries positively glowed in the grey fog and were considerably enhanced by the rime-edged foliage.

Under glass at Wisley there is a good show of Fuchsias, among which large-flowered varieties such as the double Lima and Try-me-on, with its large, skirt-like corolla, are conspicuous. Another variety which is blooming profusely and whose blooms, if not individually striking, are most attractive when seen collectively, is Cupid, with deep rose calyx lobes and a mauve corolla. Fuchsia parviflora, a native of Mexico, with small leaves and tiny, red flowers, is also in bloom, while the even more curious F. procumbens, whose greenish flowers are over, is now in fruit, and bears numbers of rather large, oval, red berries covered with a glaucous bloom.

In the alpine house several hybrid Saxifrages belonging to the Kabschia section are showing their first flowers, including S. Lady B. Stanley, and S. Brenda, with pretty pink blooms. A few of the earliest Primulas are also starting into bloom, such as P. megasaefolia, P. frondosa and P. Winteri. The plants of the last species which grow in the rock garden, however, are much further advanced than those in the alpine house. Other plants of interest in and around this house include Parochetus communis—the Blue Pea—Iris alata, a pretty, blue-flowered, bulbous species, and Viola arborescens, with flowers of very pale lavender and possessing a stiff and erect habit.

Still more improvements are being carried out in connection with the rock garden. Around the cave, the rock work has been altered and replanted over a large area. This considerably enhances the effect of a good specimen of Stranvaesia undulata which surmounts this section. The cave itself has not been touched and remains effectively draped with a number of spreading and climbing plants which form a dense, interlacing mass. They are composed of Loniceras, Cotoneaster horizontalis and Muehlenbeckia varians, which has wiry stems and leaves in the shape of a fiddle.

Another portion of the rock garden which is being altered is the bottom corner nearer to the Peach wall. The existing Yuccas and Junipers are being supplemented with new varieties and among them is an unnamed dwarf Juniper, lately received from Bonin Isle. A new path also is being made into the rock garden, an extension of the walk which runs from the Laboratory along the Peach wall. It leads through the outskirts of the wild garden, and the clearing of the ponticum Rhododendrons in the formation of the path has exposed to view a fine specimen of Ilex latifolia which has hitherto passed unnoticed. The leaves are of a similar shape and size to those of a Rhododendron, but the margins are serrated. It also bears red berries. Progress is being made with work on the piece of ground which is being developed by the river bank. This is a large, flat strip by the waterside and is composed of rich alluvial soil. Bamboos, such as Arundinaria japonica, A. anceps and A. nitida, have already been planted, and a large area will be devoted to Daffodils, for which this should be an ideal spot. There are many places here also which should favour the growth of bog Primulas, Japanese Irises and foliage plants, such as Rogersias and Gunneras, while the high bank at the back would look well planted with Rhododendrons and Azaleas. *J. E. Grant White.*

MESEMBRYANTHEMUM.

(*Continued from p.* 450.)

12.—GLOTTIPHYLLUM HAW.

12. G. angustum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327. Leaves linear—tongue - shaped, semicylindric, very long, 3–4 inches long and ¼–½ inch broad according to Haworth, who described it from memory only (he subsequently gives no other dimensions). Flowers subsessile. Calyx very large and fleshy, 4-lobed, the larger lobes gibbous and keeled on the back. Corolla 3–4¾ inches in diameter, petals numerous, united at the base for about a quarter-of-an-inch, up to 2 lines broad, obtuse and obsoletely crenate at the apex. Stamens yellow. Stigmas 10, long. Capsule with 10 ridges on the top.

M. angustum, Haw., *Obs.*, p. 176 (1795), *Misc. Nat.* 34, *Syn. Pl. Succ.*, p. 222, and *Rev. Pl. Succ.*, p. 101, not of Berger nor other authors.

South Africa : Locality unknown, introduced by Masson in 1790, according to Aiton.

The above description, taken from Haworth's account of it, contains all that is known of this species, which is evidently quite distinct from any that has hitherto been figured and unlike any species I have seen, although G. concavum N. E. Br., must be near it. Haworth states that it can be "recognised at sight by its semicylindric leaves." The large flowers with the petals united for a quarter-of-an-inch at the base, however, distinguishes it from any other species at present known.

In his *Revisiones Plantarum Succulentarum* Haworth adds two varieties :—var. pallidum, which is a synonym of 13, G. taurinum, N. E. Br.; and var. heterophyllum, which is a synonym of 16, G. longum var. hamatum N. E. Br.

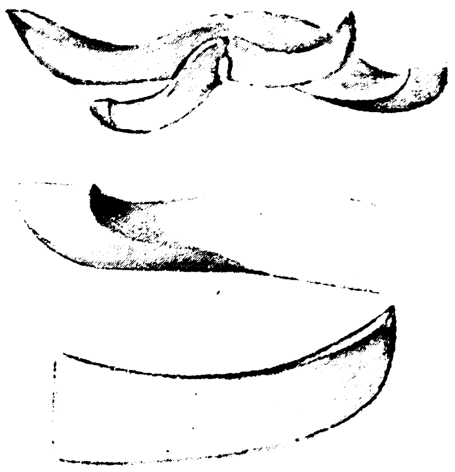

FIG. 218.—GLOTTIPHYLLUM TAURINUM.

Sketch of growth, reduced, and apical part of leaves, natural size, adapted from Salm Dyck. Flowers sessile.

13. G. taurinum, N. E. Br. in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9 (Fig. 218).—Leaf-pairs "obliquely cruciate" or obliquely crossing one another, 2–2½ inches long and 6–9 lines broad, semi-terete, flat above, obliquely convex on the back, one leaf often oblique (compressed and keeled) at the obtuse apex, very thick, upcurved or incurved, often somewhat finger-shaped and nearly as large as a finger, "the younger always incurved and resembling the horns of a bull," yellowish-green (in summer time), somewhat pellucid-punctate. Flower sessile. Calyx bifid, with the lobes unequally membranous and keeled, according to Haworth, but the flower he examined was doubtless abnormal and normally it probably would be 4-lobed. Stigmas 8–9, plumose. Corolla not described by Haworth, but according to Salm Dyck's figure, quoted below, it is about 2–2½ inches in diameter, with the petals in 1–2 series, subacute or bluntly pointed at the apex.

Mesembryanthemum taurinum, Haw., *Syn. Pl. Succ.*, p. 224 (1812), and *Rev. Pl. Suc.*, p. 100 (1821); Berger, *Mes. und Port.*, p. 236. M. angustum var. pallidum, Haw., *Rev. Pl. Succ.*, p. 101. M. angustum, Salm Dyck, *Hort. Dyck*, 1818, p. 17, and *Mes.*, §7, Fig. 6; not of Haworth. M. linguiforme var. angustum, Berger, *Mes. und Port.*, p. 241.

South Africa : Locality and collector unknown. Fig. 218 is adapted from Salm Dyck's figure quoted above under the erroneous name of M. angustum.

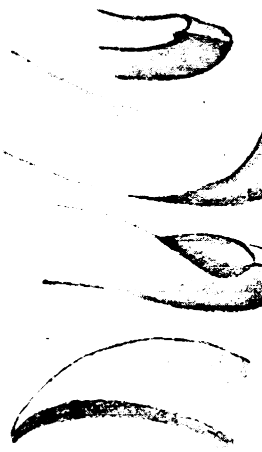

FIG. 219.—GLOTTIPHYLLUM UNCATUM.

Leaves adapted from a drawing at Kew. Flowers pedicellate.

14. G. uncatum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 336 (Fig. 219).—Growths apparently prostrate. Leaves in two ranks, very spreading and slightly sloping downwards, 2–3 inches long and 7–8 lines broad, strap-shaped, more or less curved, flat above, obliquely convex beneath, with the apex of one leaf of a pair thickened and keeled on the back and slightly hooked or upcurved edgeways at the obtuse apex. Pedicels 6–9 (in fruit up to 12) lines long, compressed. Calyx 4-lobed. Corolla about 2 inches in diameter; petals in 1–2 series, acute, yellow. Stamens yellow. Stigmas 10, short, plumose, yellowish. Ovary globose, convex on the top.

Mesembryanthemum uncatum, Salm Dyck, *Mes.* §8, f. 6. M. longum vars. uncatum and attollens, Haw., *Rev. Pl. Succ.*, p. 97 (1821). M. linguiforme vars. uncatum and attollens, Berger, *Mes. und Port.*, p. 240 and 241.

South Africa : Locality and collector unknown. It was raised at Vienna in 1816 from seeds received from South Africa according to Salm Dyck.

I have not seen this species. There is a good unpublished coloured drawing of it at Kew, made in 1823 from a plant received that year from Salm Dyck himself, from which Fig. 219 was adapted.

15. G. proclive, N. E. Br. (Fig. 220).—Growths more or less decumbent or prostrate. Leaves in two ranks, directed forward in the direction of growth, more or less sloping downwards and somewhat spreading or diverging, 2½–4 inches long, 6–7 lines broad at the middle and 3–5 lines thick, upcurved edgeways or by a slight twist at the obtuse apex, flat or slightly concave on the face, convex on the back, the larger leaf of each pair being somewhat compressed and keeled where produced beyond the flat face at the apex. Flowers sessile or subsessile. Calyx-lobes all flat and apparently with very broad membranous margins. Corolla about 2½ inches in diameter; petals in two series, about one inch long, cuneately linear, obtusely pointed or notched at the apex, yellow. Stamens very numerous, apparently arranged in a dense ring. Stigmas 9.

Mesembryanthemum angustum var. heterophyllum, Salm Dyck, *Mes.*, §7, f. 6B, not of Haworth. M. linguiforme var. heterophyllum, Berger, *Mes. und Port.*, p. 241.

South Africa : Locality and collector unknown.

The above description is compiled and Fig. 220 adapted from Salm Dyck's figure above quoted as I have not seen any plant like it, for it is quite distinct from the plant Haworth called M. angustum var. heterophyllum (see 16, G. longum var. hamatum), differing conspicuously by its less hooked leaves, from which the elevated ridge along the lower margin of the larger leaf of a pair is apparently entirely absent, and by the sessile flowers.

16. G. longum, N. E. Br., in *The Gardeners' Chronicle*, 1922, Vol. LXXI, p. 9 (Fig. 221, p. 471).—Leaves more or less in two rank usually about 3 pairs to a growth, at first ascending and then spreading, or remaining ascending under some conditions, 3–5 (or in young plants up to 9) inches long, 7–11 lines broad and 3–4 lines thick, strap-shaped, usually somewhat curved, very obtuse, or here and there obliquely pointed or rarely slightly hooked at the apex, flat on the face, convex on the back, with the thickest part of the convexity usually nearer one margin than the other and sometimes forming an oblique keel at the apex, soft and pulpy in substance, smooth, glabrous, light green, shining, with a very evident paler and somewhat, triangular swelling or pustule at the base on the upper side. Pedicels erect, 1¼–1½ inch long, slightly compressed and about 3 lines thick, smooth, glabrous, green. Calyx 4-lobed, glabrous, green ; lobes 5 lines long, the two outer about 5–6 lines broad and the two inner 3 lines broad, ovate, obtuse and more or less membranous at the tips convex (not keeled) on the back. Corolla 2–2½ inches in diameter, expanding in the morning in bright sunshine, and lasting 4–5 days, not scented; petals numerous, in about 2 series, 14–15 lines long and 1 line broad, linear, acute, clear yellow, slightly shining, paler on the back. Stamens very numerous, erect in a ring around the stigmas and top of the ovary, about 3 lines long; filaments and anthers orange-yellow. Stigmas 10-11, about 1 line long, radiately spreading, plumose, greenish-yellow. Ovary partly superior, flattish-convex on the top, 10–11-celled; placentas on the floor or outer walls of the cells. Capsule about 8 lines in diameter and 4 lines long or deep, half-superior, about equally flattish-convex above and beneath, with 10–11 valves and cells ; structure as for the genus.

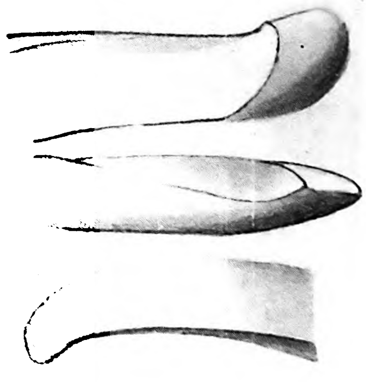

FIG. 220.—GLOTTIPHYLLUM PROCLIVE.

Apical part of leaves, natural size, adapted from Salm Dyck. Flowers sessile or sub-sessile.

Mesembryanthemum longum, Haw., *Obs.*, p. 177 (1795). *Misc. Nat.*, p. 34 (but not of *Syn. Pl. Succ*, p. 221, and *Rev. Pl. Succ.*, p. 96); N. E. Br. in *Journ. Linn. Soc., Bot.*, Vol. XLV, p. 70. M. linguiforme var. d, Linn. *Sp. Pl.*, ed. 1, p. 488, founded upon M. folio linguiformi longiore, Dillen. *Hort. Elth.*, p. 238, t. 185, f. 227. M. linguiforme, D.C. *Pl. Grass.*, t. 71. M. linguiforme vars. longum and pustulatum, Berger, *Mes. und Port.*, p. 240. M. pustulatum, Haw., *Suppl. Pl. Succ.*, p. 88

(1819), and *Rev. Pl. Succ.*, p. 96; Salm Dyck, *Mes.* §8, f. 10, and var. lividum Salm Dyck, §8, f. 10B; N. E. Br. in *Journ. Linn. Soc. Bot.*, Vol. XLV, p. 133. G. pustulatum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327.

Port Elizabeth Division: near Port Elizabeth, Burchell, Uitenhege Division: common about Zwartkops, Despatch and Perseverance, Muir 3823! and near Uitenhage, 17-170 feet above sea level and flowering in December and January, Muir 3824! Introduced into cultivation about 1700 or earlier, as the bad figure in Volckamer, *Flora Noribergensis*, p. 165 is doubtless intended to represent this species.

In my previous account of this genus in *The Gardeners' Chronicle*, as above quoted, I was not sure of the correct identity of G. pustulatum, because I had not then seen any specimen definitely known to come from the region of Port Elizabeth Division, where Burchell found it. But now that Dr. Muir has sent me plants from that area which are unquestionably G. pustulatum, I find that (as might be expected from its being a native of that well explored region) it is not uncommon in cultivation, and that beyond doubt is the same as G. longum, although neither Dillenius, De Candolle nor Haworth mention or figure the pustule at the base of the leaves, but as it is often not very conspicuous unless sought for, and not so distinct in this country as on native-grown specimens, may easily have been overlooked by them, or considered to be of no specific significance at the period (1795) when Haworth first described the species, for the pustule was not noted as a character of any species of this genus until twenty-four years later, when G. pustulatum was first described. Dillenius and De Candolle represent the pedicels as being 2½–3 inches long, but this, in my experience, is unusual, and must be due to some condition of cultivation.

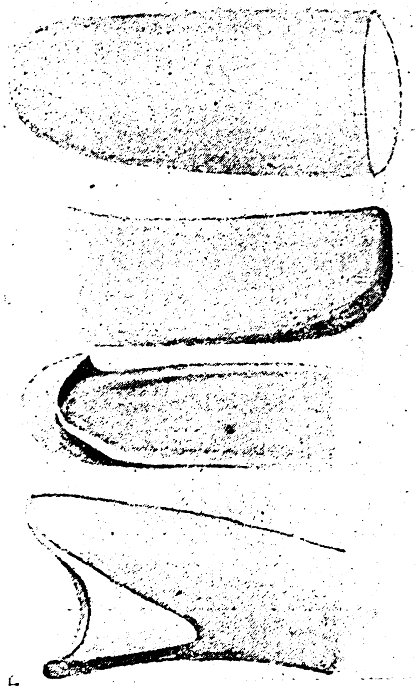

FIG. 221.—GLOTTIPHYLLUM LONGUM.

Apical part of three leaves, and base of a leaf with pustule, all from one plant; natural size. Flowers pedicellate.

It is somewhat remarkable that Haworth seems uncertain of his identification of M. longum, and must certainly have had two different species under that name. For in 1795, under his original description, he states that:—"Mr. Aiton does not notice this plant in his Hortus Kewensis, but I have seen it very fine at Kew." And in his *Synopsis Plantarum Succulentarum* (1812), under M. adscendens, he writes: "If the next species but three (*i.e.*, M. longum) is not the *M. folio linguiformi longiore* of Dillenius, this may be it, but if so he has delineated the leaves too long." Later, (*Rev. Pl. Succ.*, p. 96) he states that M. adscendens is "probably a variety of M. longum." This seems to indicate that he was not very clear as to what M. longum was. All the above are described as having the pedicel "longer than the calyx" or "two inches long or more." But under M. longum in his *Rev. Pl. Succ.*, p. 96, he describes the flowers as subsessile! So that this would appear to be some different species. Evidently there is some confusion, for under M. longum var. flaccidum on p. 96 of *Rev. Pl. Succ.*, Haworth quotes both Volckamer's figure mentioned above and the figure in the *Botanical Magazine*, t. 1866, as representing the same species. But Volckamer's plant has erect or ascending long leaves and pedicellate flowers and is no doubt a bad figure of G. longum, while *Bot. Mag.*, t. 1866, represents a plant with short leaves pressed down close to the ground and sessile flowers and belongs to G. depressum.

Var. hamatum, N. E. Br. (Fig. 222).—Growths pressed upon the ground. Leaves not spreading but directed forwards in the direction of growth, 2–3½ inches long, 7–10 lines broad and one leaf of a pair 3–4 lines thick and the other 4–5 lines thick, strap-shaped, straight or slightly upcurved edgeways, the smaller leaf flat or faintly convex on the face, convex on the back and obtuse at the apex, and the larger leaf of each pair with the face somewhat obliquely concave, from being raised all along the lower margin into a strong and somewhat acute ridge, obliquely and bluntly keeled on the back, and with a very large and conspicuous obliquely incurved hook at the apex; both leaves have a pustule or swelling at the base; surface smooth and shining, and the surface-cells neither raised nor depressed as seen with a strong lens, light green. Pedicels 3–7 lines long, slightly compressed and slightly 2-edged, 3–3½ lines broad. Calyx (a dried flower only seen) subequally 4-lobed; lobes about 4–5 lines long and 3½ lines broad, ovate, two of them acutely keeled. Corolla about 2½ inches in diameter according to the figure; petals numerous, in 2 series, free or nearly so, apparently 10-12 lines long and ¾ line broad, cuneately linear, obtuse, yellow. Stamens very numerous, about 3 lines long, yellow. Stigmas 8-9, about 1 line long, spreading, plumose. Capsule when closed 7–8 lines and when expanded 12–15 lines in diameter, shortly and broadly obconic, flattish, with 8-9 gaping ridges on the top, and with 8–9 valves and cells; brown outside, pallid within; valves reflexed; expanding keels distant, subparallel, with acute and microscopically denticulate edges, pale ochreous-brown or honey-coloured, tipped with a linear or oblong-linear membrane; cells acutely roofed and the opening nearly closed by a very large white tubercle. Seeds ½ line in diameter, compressed-globose, with a small inflexed nipple, smooth, pale brown.

Mesembryanthemum heterophyllum, Jackson, in Andrews, *Bot. Rep.*, Vol. VIII, t. 540 (1808), not of Haworth nor Salm Dyck. M. angustum var. heterophyllum, Haw., *Rev. Pl. Succ.*, p. 102.

Uitenhage Division: Near Uitenhage, 170 feet above sea level, Muir 3,824 growing on the same root as the type form! ex Dr. Muir.

When I received a plant of this remarkable form from Dr. Muir, I at once recognised it as being the same as that figured in Andrews' *Botanical Repository* as above quoted, of which I cannot find any record that it has been in cultivation here since the period of that figure. As I received it without information of its origin I naturally considered such a distinct-looking plant to be a distinct species, and made the above description of it. When, however, I received information of its origin from Dr. Muir, it was as follows:—"My Glott. pustudatum and your proposed Glott. hamatum both grew on the same root, and are both 3,824 from near Uitenhage, 170 feet. You get flat adult leaves and leaves extensively hamated as you noted. The latter is one of the turgid very succulent forms which it assumes. Some of them are as hooked as the hooked index finger. My 3,824 I collected myself. I have other collections of the same plant which I brought from gardens at East London. They were also collected in Uitenhage Division at Dispatch, and taken to East London, and they show the same heterophylly." If collectors had only sent such valuable information as this with plants sent to Europe many errors would have been avoided; for I doubt if any cultivator or botanist in this part of the world without knowledge of the fact would have suspected that the two forms of leaves represented by Figs. 221 and 222 grew upon the same root and are therefore not even legitimate varieties, although, for garden purposes, I have here so considered them. It is remarkable that besides the difference in the shape of the leaves, the portion of the plant sent to me with hooked leaves also differs from the typical form of G. pustulatum by having shorter pedicels and fewer stigmas and valves and cells to the capsule.

The only other known species described as having a pustule at the base, are the allied G. erectum (which differs by its ascending stems and leaves, and by its leaves being more acute and more centrally pointed), and the very dissimilar G. grandiflorum and G. Salmii, which both have sessile flowers.

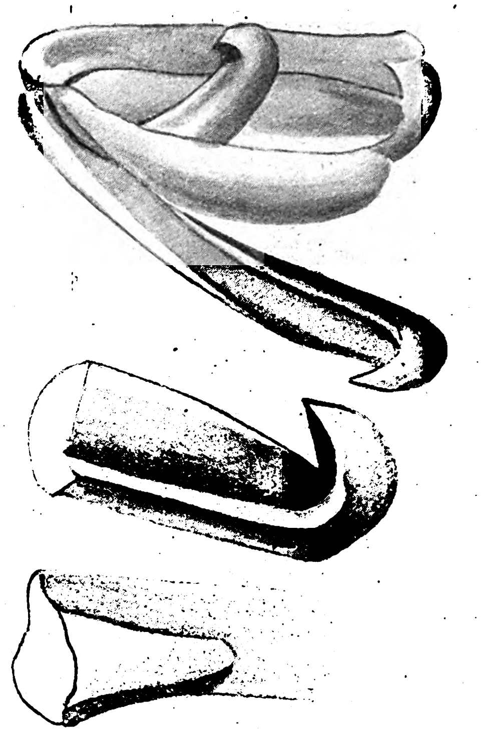

FIG. 222.—GLOTTIPHYLLUM LONGUM VAR. HAMATUM.

Growth with three pairs of leaves, reduced, to show pcse; and the apex and base of other leaves, showing hook and pustule, natural size. Flowers pedicellate.

I am informed by Dr. Muir, to whom I am indebted for living native material of this species and its varieties, that "in its native habitat a number of the growths grow from one stem, and as they get larger tend to slope towards the ground. They form patches a yard or more in diameter, so dense that the ground is completely covered. The leaves are pale green, and when they get water reach a length of ten inches." Figs. 221 and 222 are both made from the plants sent to me by Dr. Muir under No. 3,824 as being portions from the same root, as above stated. The plant from Alice, which I formerly thought might be G. pustulatum, proves (now that I have seen the true G. pustulatum (*i.e.*, G. longum) from its type locality) to be distinct, and belongs to the next species, G. erectum.

M. longum vars. angustius, and purpurascens, Haw., *Rev. Pl. Succ.*, p. 96-97; Berger, *Mes. und Port.*, p. 240 are quite unknown, and may possibly belong to some other species. *N. E. Brown.*

(*To be continued*).

IMPROVING THE FLAVOUR OF APPLES AND PEARS.

That there is a remarkable difference in the quality of many varieties of Apples and Pears grown under differing conditions is well known. The reason for such differences is not altogether understood, but soil is generally recognised as having considerable effect.

It does not always follow, but it is often the case, that when fruits are grown under conditions which favour the production of exceptional size a certain amount of coarseness in the flavour is noticeable. Certain types of stocks appear to favour such coarseness to some extent, while other types tend to counteract it. Dwarfing stocks tend to refine the flavour of the fruits.

Lack of flavour often occurs where rank manure has been applied freely to the soil, especially where young trees are concerned. Manuring is undoubtedly beneficial, but manure which has stood for some time in the heap should be used for the purpose. A further cause of inferior fruit may be found in the use of fertilisers of an unsuitable nature, while the use of suitable fertilisers may tend to improve the flavour very markedly.

So far as the influence of soil is concerned, it is usually found that fruits of fine quality are produced from trees grown in soil containing a proportion of gravel, though such soil does not always encourage the heaviest of crops. Soils containing lime or chalk produce fruits of excellent quality.

Every effort should be made to improve soils on which fruit of poor quality is produced, and though this is a difficult task it is quite possible to succeed. Drainage is the first matter needing attention. Soil on which fruits are grown should always be thoroughly drained. A dressing of lime well worked in around the bases of the trees will have a refining influence upon the quality of most fruits, and it is difficult to imagine poor flavour in either Pears, Apples or Plums grown in well-limed soil.

The soil should be kept in good condition by regularly digging around the bases of the trees. This may not have a direct influence upon the flavour, but it has a tendency to keep the trees in a healthy condition and prevent the rankness of growth which is so often associated with poor flavour.

From soils which produce dessert Pears and Apples far bigger than the average size of the variety, the fruits are often of harsh or inferior flavour. Where this is the case it is often possible to remedy the defect by a dressing of some potash manure, together with ring barking or root pruning the tree at the proper time. These operations, taken together, have a tendency to produce fruit of excellent quality and size, and at the same time the continued productiveness of the trees is ensured.

It will be seen that while it is not possible to control flavour in fruits to quite the same extent that it is possible to deal with colour, the grower can, nevertheless, improve the flavour, where necessary, very markedly. Both in private gardens and commercial plantations, refined flavour is appreciated and the work necessary to produce it is well repaid at harvest time. *J. W. Morton, March.*

FRUIT GARDEN.

BULLACES AND DAMSONS.

Bullaces and Damsons are of considerable value for culinary purposes and for preserving while certain varieties of Damsons form a palatable addition to the dessert. They are particularly hardy, and trees, with advantage, may be anted to form shelters or wind-screens for the fruit plantation.

The Bullace is indigenous to Great Britain, and its fruits may be made into an excellent preserve. Damson cheese, Damson jam and bottled Damsons are of first-rate quality and are valuable additions to the preserve cupboard. In some districts a palatable wine is made from the fruits.

It is usual to cultivate these fruits in standard or half-standard forms, and the removal of crowded growths represents the necessary pruning.

The Black Bullace is occasionally found in hedges and woods; the small, black fruits, covered with a thin bloom, are of rather austere flavour, but improve under the influence of October frosts.

Shepherd's Bullace is a large, greenish-yellow variety, round to oval in shape; the tree is of upright growth.

Langley Black Bullace, ripening in November, is of medium size, oval, dark purple, of fine flavour and considerable value; this fruit was raised by Messrs. J. Veitch and Sons (Farleigh Damson × Early Orleans) and introduced in 1902.

Royal Bullace ripens its fruits in early October; they are yellowish-green, faintly mottled with red on the side next the sun. The flavour is brisk, with sufficient sweetness to make it agreeable. The tree is an immense bearer. Essex Bullace and White Bullace are other well-marked varieties.

Of Damsons, The Merryweather is outstanding. The fruits mature late, are large, roundish, and black, with firm flesh. The tree is vigorous. This is a fruit of very considerable value for culinary use and preserving. It was introduced by Messrs. Merryweather and Sons in 1907.

Farleigh is a late Damson; the fruits small, oval, black; it is a self-fertile variety, a great cropper and of compact growth. It was found wild by Mr. Crittenden, of Farleigh, Kent.

Frogmore produces fruits of remarkably sweet flavour, and these mature early; they are roundish-oval, purplish-black, with a thick bloom. Partially self-fertile and a prodigious cropper, this Damson originated in the Royal Gardens, Frogmore, about 1870.

Bradley's King is of medium size, oval, black, with a very thick bloom; when fully ripe, the fruits are of fine flavour. This is a self-fertile variety.

The Prune Damson has been known since the seventeenth century, and is, perhaps, the finest culinary variety. The fruits are small and tapering, of very dark colour, with a thick bloom. Unfortunately, it is not a regular cropper. The tree is of weeping habit.

Other Damsons are the White, Dalyrymple and the Common.

The Zwetche produces small, long, oval, fruits, dark blue in colour, and excellent for stewing or bottling. The flesh is firm, juicy, sweet and separates from the stone. This is largely grown on the Continent and is known as German Prune, German Quetsche, Leipzig, Sweet Prune and Turkish Quetsche. *A. E. R.*

APPLES OF PECULIAR COLOUR.

Blue Pearmain is a useful late Apple of large size, with the skin striped and blotched with dark purplish-red, over a dull ground; it gains a bluish tint from the white bloom it carries. Large russety yellow dots are sprinkled all over the skin, and the bloom which overspreads it makes the fruit very noticeable.

Some thirty years ago I found several trees of Hoary Morning distributed over the county of Suffolk and was always interested in them because of the intense colouring of the fruits. The latter are large, roundish, somewhat flattened and angular; the skin yellowish, marked with broad, pale red stripes on the shaded side, and broad, broken stripes of bright crimson on the side next the sun, while the whole surface is entirely covered with a thick bloom, like the hoar frost. This very attractive Apple has a yellowish-white flesh that is tinged with red just under the skin; the flavour is brisk, juicy, rich and slightly acid.

Hollandbury, one of the most beautiful and showy of Apples has very large, roundish and flattened fruits with irregular and prominent angles extending from the base to the apex. The skin is deep yellow, tinged with green on the shaded side, but bright deep scarlet next the sun. The white flesh is tinted with green, delicate, tender and juicy, with a brisk and pleasant flavour. Hollandbury is an effective Apple on the exhibition table.

Sops-in-Wine is a very ancient English culinary Apple of rich, deep chestnut colour, approaching orange-red, with a yellow shading, minute dots and a covering of delicate white bloom. The flesh is red, as if soaked in wine, tender, sweet, juicy and of fair flavour. A few old trees of this variety remain in the Herefordshire orchards, but I have never heard of any one renewing the stock. I have a strong growth grafted on a Red Victoria, as I consider Sops-in-Wine is one of the showiest Apples obtainable. *Pomona.*

ALPINE STRAWBERRIES.

Because of the difficulty experienced in many gardens with the large-fruited varieties, it is probable that more interest will be taken in the cultivation of alpine Strawberries.

The Alpine Strawberry, at its best, is much appreciated as a dessert fruit and is also in demand for bottling. Plants are easily raised from seeds, and an early sowing may be made in January. Sow the seeds in pans filled with a light, rich compost and place them in gentle heat. The seedlings may be pricked out into boxes or on a bed under a frame. Air must be admitted carefully and the plants gradually hardened.

Choose a partially-shaded site for the beds; an east or north border is generally the most convenient. Alpine Strawberries may also be planted under standard Apple or Pear trees. They thrive in a deep, rich, moist soil. Plant them eighteen inches apart each way and never allow them to suffer from drought. Mulching is advisable, and the mulch may consist of leaf-mould or manure from a spent hot-bed. Short, clean straw may be added before the fruit commences to colour.

Fruits from the early-raised plants will ripen during September or earlier (according to the season and locality). The ripe fruits do not suffer from damp so quickly as in the case of the large-fruited varieties.

Stock may also be raised from seeds sown in drills on a bed of light soil in the open, during the spring or autumn. Draw the drills nine inches apart and transplant the seedlings before they become crowded. Such plants will produce an early crop the second year, and continue in a fruiting condition for several months, under liberal treatment.

Fortunately, birds do not pay much attention to the fruits of the Alpine Strawberry.

There are several good varieties, one of the best being Rouge Ameliore (syn. Improved Red) which is very prolific and hardy. The fruits are long and much larger than those of the ordinary Alpine Strawberry. The variety Blanc, with white fruits, is distinct and useful. *Colin Ruse.*

FRUIT REGISTER.

APPLE DUCHESS'S FAVOURITE.

This brightly-coloured Apple is also known as Duchess of Gloucester and Scarlet Incomparable; the fruits are of small to medium size, somewhat round or bluntly angular, the colour a most brilliant red, except when the fruit is shaded, and then it is yellow. The yellowish flesh is tender, juicy and well-flavoured, but sometimes it is suffused or stained with red, strongly reminiscent of the variety Sops-in-Wine.

A prolific cropper, this Apple succeeds in any form and is, I believe, frequent in the orchards of south-eastern counties. Duchess's Favourite was raised at Addlestone by a nurseryman; the Duchess of York of that period having expressed appreciation of the fruit's flavour suggested the name by which it has since been known.

APPLE ADAMS'S PEARMAIN.

Not a single writer of note has ever given us the origin of this excellent late dessert Apple. Mr. A. Partridge, late of Wharton Court, near Leominster, stated that his grandfather, named Adams, claimed to be the raiser. He raised a number of seedlings from the refuse of the cider mill and selected this particular variety for planting in the garden. Another story is that Adams's Pearmain was known in Norfolk under the name of Norfolk Pippin.

The fruits are of medium to large size and of beautiful colour; the flesh is yellowish, crisp, juicy, rich and sugary, with a perfumed flavour. The Apple is in season during February. The tree is a free cropper and a very healthy grower. *Pomona.*

VEGETABLE GARDEN.

STORING ONIONS.

Various methods are adopted for storing Onions, and the article in the issue of *The Gardeners' Chronicle* for November 12, on the Dutch method, is very interesting. It appears that the climatic conditions in Holland very much resemble those which prevail around the cotton districts of Lancashire in being very moist. These particular moist areas I find do not allow the Onions to ripen off in the ground so early or so well as in more favoured districts, therefore one has to resort to some other method of ripening the bulbs for keeping purposes.

Having to keep up a constant supply for a very large hospital until April (when the average English Onion begins to grow out), I have adopted the method illustrated in Fig. 223.

I may mention that 22° of frost is the most I have experienced, with no ill effects, but the Onions must not be handled until the frost has thawed out of them.

I partially lift the whole crop, some 20,000, the beginning of September. The Onions are planted out, as the method of sowing outside is very unsatisfactory in this district. At the end of September, when the tops are still green, they are tied in bunches of six or eight, two bunches being tied together and slung over rows of nails on the side of an outbuilding, preferably the gable ends. The green tops make a kind of thatch as the work proceeds from the bottom upwards. No further attention is necessary until the Onions are required for use. In this way the sun and wind gradually ripen the bulbs, and they become equally as firm as those grown and stored under more ideal conditions. I am invariably asked if the frost spoils them, presumably because many writers recommend storing under cover. I have practised this method for the past six years and can thoroughly recommend it. *A. Falconer, Cheadle Royal Hospital, Cheshire.*

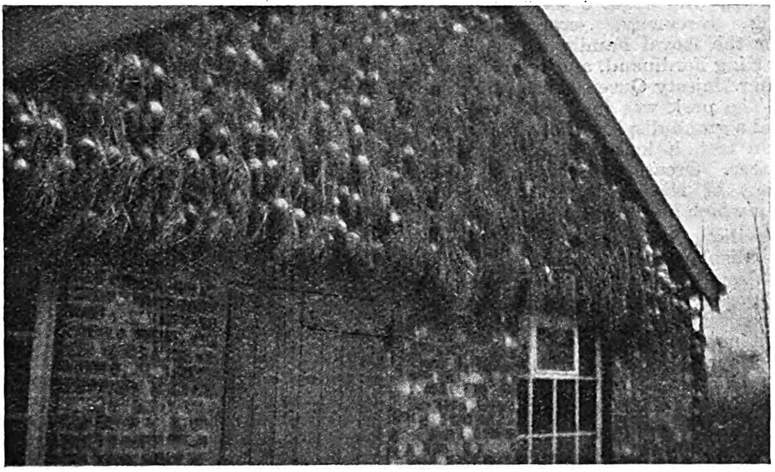

FIG. 223.—A METHOD OF STORING ONIONS DURING WINTER.

HOME CORRESPONDENCE.

Poinsettias.—Euphorbia pulcherrima is a most useful plant for Christmas decorations. It is not frequently grown for cutting, but is nevertheless suitable for that purpose. Plants may easily be obtained grown to a height of five feet to six feet, with heads of brilliant scarlet bracts twelve to fourteen inches in diameter. It is surprising how few decorators know how long the Poinsettia will last in the cut state, in water. I find it most beneficial to place a tablespoonful of table salt to each gallon of water used for the vases in which they are placed. It is essential to seal the ends immediately the stems are cut to prevent the rapid discharge of the milky juice with which the Poinsettia is so plentifully supplied, but it must be remembered that plants should be well-watered a few hours before cutting takes place. So soon as each cut is made the wound should be held for a few seconds in boiling water, and if any leaves are to be removed, boiling water should also be used to seal the wounds thus made. Under this treatment Poinsettias will last splendidly for a fortnight to three weeks. After fourteen days the leaves will lose their colour, but the bracts will remain almost perfect. *A. Lyddiatt, Heytesbury House Gardens, Wilts.*

Pernettya mucronata.—The seedling forms of this evergreen shrub are very effective when planted in bold, irregular groups in the woodland garden. The small, white, bell-shaped flowers open in May and are in pretty contrast with the new, bright-red shoots and small, deep-green, prickly leaves. Berries are freely produced in the autumn and often remain through the winter, their colours ranging from white and pale pink to crimson and purple. A curious fact I have noted this year is that two large bushes are flowering for the second time but are bearing no fruits. Seedlings vary in habit; there are dwarf, prostrate, erect and drooping varieties; the erect sorts often grow from two to three feet in height. Pernettyas succeed best on heavy soils of a peaty nature, either in full sunshine or half shade. *S. Bowler.*

Pea Amateurs' Pride.—As the season is drawing near when seed lists are perused, I venture a few words in praise of Pea Sutton's Amateurs' Pride. It is a first-rate variety recommended to me by a keen vegetable grower. I gave it a trial, and found it very useful. Choosing an open site in the kitchen garden I opened a trench two feet wide by two feet six inches in depth, forked into the bottom plenty of well-decayed manure, turned the first spit on to this, gave a good dressing of superphosphate, and finally filled the trench to the ground level. Nothing further was done until sowing time. Amateurs' Pride is a variety of excellent flavour, the pods containing nine to eleven Peas; it grows from five to six feet tall, and is a variety I can thoroughly recommend. *James Findlay, Ash Grove Gardens, Sevenoaks.*

Birds and Fruits.—I venture to ask your correspondents who are so loud in their praises of the vast amount of good done by the blue tits, what means they adopt to protect Doyenné du Comice Pears and Cox's Orange Pippin Apples? If they do not grow these fruits they are hardly in a position to know anything of the trouble caused. I quite agree with Mr. C. Nicholson when he states that the vast amount of good the birds do at other times is unknown. If he had spent as many seven-days-a-week in trying to protect fruits from the ravages of birds as I have done, he would understand an Englishman's desire to go out and kill something. Practical gardeners will appreciate Mr. H. E. Durham's interesting notes on the subject. *J. Kneller, Penrhyn Castle Gardens.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on Friday, November 25, the members of Committee present were:—Messrs. A. Keeling (in the chair), R. Ashworth, D. A. Cowan, A. Coningsby, J. Evans, G. V. Llewelyn, D. McLeod, W. J. Morgan and H. Arthur (Secretary). Mr. J. Thrower was invited to sit with the Committee.

First Class Certificates.

Cypripedium Montcalm var. Hy. Astley Bell.—A large, shapely flower with a round dorsal sepal three-and-a-half inches across, heavily spotted, with a broad, white margin; petals broad and lip dark bronze.

Odontoglossum Matador var. Grand Duke Nicholas.—A large flower of good form; solid chocolate-red, with white margin. Both from Mr. John Evans.

Brasso-Laelio-Cattleya Muriel, Llewelyn's var.—A large, symmetrical flower, seven inches across, of even colour; the lip has a yellow throat. From G. V. Llewelyn, Esq.

Awards of Merit.

Cattleya Suavior, Llewelyn's var.; Brasso-Cattleya Rosita, Llewelyn's var; and Laelio-Cattleya Carmencita var. Hesketh.—From G. V. Llewelyn, Esq.

Laelio-Cattleya Sunbelle (L.-C. Serbia × C. Thora).—A very promising seedling. From Messrs. J. and A. McBean.

Cultural Certificates.

To Mr. John Evans, for Cypripedium insigne Sanderae and C. Corneyanum.

Groups.

G. V. Llewelyn, Esq., Southport, showed a group to which a Silver-Gilt Medal was awarded; this contained Cypripedium Our King, C. mirabilis, C. Boltonii, C. Colin, C. Dreadnought, C. Mulatto, C. Leonidas, C. Actaeus revoluta, and C. Earl of Tankerville; Brasso-Cattleya Maroniae and B.-C. Jupiter; Laelio-Cattleya Schröderae; Odontoglossum Woodroffiae, and others.

Mr. John Evans, Colwyn Bay, was also awarded a Silver-Gilt Medal for a group that contained Cypripedium Montcalm, C. insigne Sanderae (thirteen flowers); C. Corneyanum (eleven flowers), C. Martins, C. Gwen Manners, C. Lady Dillon, C. Silene, Odontoglossum Matador, Odontioda Bradshawiae, Calanthe Harrissii, Vanda coerulea and Oncidium incurvum.

Captain W. Horridge, Bury (gr, Mr. A. Coningsby) sent Odontoglossum Senlac, Coelogyne barbata and Cypripedium insigne Rossendale. Messrs. J. and A. McBean, Cooksbridge, exhibited Laelio-Cattleya Sunbelle, Odontoglossum St. Elmo and O. Portheus. Mr. D. McLeod, Chorlton-cum-Hardy, showed Cypripediums in variety.

THE ORCHID CLUB.

At the exhibition meeting held on December 2, there was a very extensive and brilliant display of select Orchids, Cypripediums, Odontoglossums and species being the predominant features.

Premier Diplomas.

Cypripedium Memoria J. H. Walker, var. Mars.—A medium-sized flower of excellent shape and proportions and brilliant colour. The flat, orbicular dorsal sepal, three-and-a-quarter-inches across, is of a uniform bright crimson colour with a white tip. The well displayed petals are yellow, stained with mahogany-red, and the lip is of similar colour.

Cypripedium Melody (C. Perseus, var. Ruth × C. Charlotte Dillon).—A perfectly-shaped flower of unusually beautiful colour. The flat, orbicular dorsal sepal, three-and-a-half-inches across, is porcelain white, with a small emerald-green luna, the central and basal parts being marked with crimson spots set in vertical rows, laterally the spots expand and merge into a continuous zone of brilliant rose colour which is invested by a white marginal band. The horizontal petals, set well up, are Indian-red with a yellow margin, the lip being of like colour.

Cypripedium Morea (*Chrysostom* × *Memoria F. M. Ogilvie*).—A very large flower of perfect shape and proportions, conforming with the best types of C. Chrysostom, the colour on the dorsal sepal being clearer and more decided, and the petals broader and flatter.

Cypripedium Makeda (*Lady Dillon* × *Charlotte Dillon*).—A flower of pleasing form and colour; the flat, oval dorsal sepal is white marked with vertical rows of dark crimson spots, leaving a clear white margin. The petals and lip, well displayed, are mahogany-red with a yellow margin.

These new seedlings, flowering for the first time, were shown by the raiser, Dr. **Craven Moore**.

Diplomas of Merit.

Cypripedium Morcar (*Nesta II* × *C. Hera*).—A large flower of excellent shape, the flat, orbicular dorsal sepal, three-and-three-quarter-inches across, is white, marked in the central part with a few dark crimson spots surrounded by a zone of crimson speckling, leaving a broad, white marginal band. The petals (rather small for the large dorsal) and the lip are green, with brown lines.

Cypripedium Perseus var. aurantiacum.—A new seedling closely resembling in general form the F.C.C. variety of this hybrid, but quite distinct in the pleasing orange-brown colouring. Both shown by Dr. **Craven Moore**.

Groups.

Sir **William Thom** (gr. Mr. Williams), exhibited a selection of interesting and meritorious Cypripediums, including C. Prince Albert, C. Cappa-Magna, C. Monialis, C. Mullato splendens, C. Undaunted, C. Merlin and a few new seedlings of considerable promise, together with several plants of Oncidium varicosum and O. Forbesii.

Mrs. **Hardy** showed a small group of high-class Odontoglossums, all with full spikes, including a beautiful variety of O. Princess Yolando, with large, well-shaped flowers of royal-purple colour; a fine white hybrid crispum, and excellent varieties of O. crispum xanthotes.

Mrs. **Stockwell** (gr. Mr. Weaver), exhibited a group of well-grown Cypripediums, including C. Ballet Girl with three and four flowers, C. Cyril Lee, C. Hermes and several others.

A. T. **Cussons**, Esq. (gr. Mr. Dalgleish), had a beautifully-arranged group of Cypripediums and Cymbidiums, relieved by Ferns and small Palms. Among the Cymbidiums an especially fine form of C. Doris magnificum was conspicuous, and among the Cypripediums there were some fine flowers of C. Maudiae magnificum, C. King George V, C. Memoria F. M. Ogilvie var. The Premier, C. Nandii, a delicate lady-like flower, and some first-rate C. Niobe hybrids.

B. J. **Beckton**, Esq. (gr. Mr. Stewart), exhibited an extensive and interesting selection of species, together with a few good Cypripediums, viz., C. Warrior, Green's var., C. Swallow, Westonbirt var., and C. John Hartley; and among the species were beautiful plants of the curious Bulbophyllum lemniscatum, the brilliant yellow, aromatic Lycaste cruenta, the pretty little Odontoglossum Kramerii alba, and the sweetly-scented Trichosma suavis, while Coelogyne barbata, the elegant Cyperorchis Mastersii alba and the bizarre Mormodes Wendlandii were also noteworthy.

Dr. **Craven Moore** (gr. Mr. Gilden) exhibited a group of Cypripediums of unusual merit; it included large plants of the finest Westonbirt varieties, and a range of new seedling hybrids in which form and beautiful colour had been attained in a degree not previously seen. F. T. **Paul**, Esq., showed a selection of Cypripediums in which a beautiful variety of C. Fairrieanum, a fine form of C. Perseus, and a beautiful plant of C. Pixie were conspicuous. W. **Morton Jackson**, Esq., exhibited a finely-flowered plant of Eria rhyncostyloides.

BUCAREST FLOWER SHOW.

The Bucarest (Roumania) Fruit and Flower Show, which has now been established five years, continues to be an unqualified success. The weather was a great help, on November 5, as at the opening of the show the temperature stood at 20° Reaumer, and kept so during the five days of the exhibition; the fine weather brought out a crowd of visitors who helped to swell the fund for the much needed new pavilion.

The exhibition was opened by the Ex-Queen of Greece, accompanied by Dr. Argentoianu, Minister of Agriculture, the Minister of Justice, the Bishop of Roumania and the Regent. Princess Bibesco and Brigadier-General Lord Thomson, who were staying at Mogosoca during a visit to Roumania, were present and greatly admired the show. Lord Thomson is no stranger here, having been British Military Attaché for Roumania before the war. The President, M. Charles Farando, who hurried back from France, where he had been called as judge in Paris to represent the Roumanian Horticultural Society, gave great credit to the English growers who exhibited there, especially those who showed Carnations.

The President, who made a short speech at the opening ceremony, expressed deep sympathy for the Royal Family in the loss of His Majesty King Ferdinand, and regretted very much that Her Majesty Queen Marie could not be present. The park was in perfect condition and contained a grand display of dwarf Chrysanthemums; in fact, it looked more like spring than November. Great credit is due to the Superintendent of the park, Mr. Z. Bucur, for the way in which his charge is kept.

In the pavilion, where the exhibits were arranged, the display was not quite up to the standard of last year. Vegetables were not so plentiful nor so well arranged. The non-competitive exhibit from the Royal Palace Gardens were not so attractive as last year owing to the Royal Family being in mourning; it consisted chiefly of coloured leaves and branches and wreaths, which were very tastefully arranged at one end by themselves (gr. Mr. F. Rebhunm).

Messrs. **Charles Farando and Sons**, Bucarest, also exhibited a non-competitive group, of a high standard of merit, at one end of the pavilion; this contained standard Bay trees in tubs, and large vases filled with big blooms of Chrysanthemums, which were very much admired; the varieties included Mr. Phillip Rivoire, Souvenir le Graisivandon, Kara Dow, Captain Foo, Daily Mail and others, with an underground of a bronze Single, dwarf Chrysanthemum.

H.H. **Prince G. V. Bibesco**, from the Palace of Mogosoca (gr. Mr. J. W. Funge), again secured the Society's Gold Medal for a splendid collection of Grapes and flowers—the former including Madresfield Court, Alicante and Marchal Gallien—dishes of Apples, and Quinces weighing over 2 lb. each, intermixed with plants, single Chrysanthemums, Streptocarpuses and a Laelio-Cattleya—the first to be shown at this Society's exhibition.

Mr. A. **Montigny** showed very fine specimen Palms and Ferns in variety, but none of them was named; this firm also showed some very fine fruit trees including Apricots, Pears, Plums and Apples (Gold Medal).

Messrs. T. H. **Scheidegger and Sons**, Bucarest, who filled one end of the pavilion with mixed decorative plants and Chrysanthemums, also showed a fine collection of over two hundred named varieties of Cacti which proved very interesting to those who understood them. (Gold Medal). Mr. **Thomas Kraus**, Brasov, again showed first-class Cyclamens and Carnations, and was awarded a Gold Medal. Messrs. **Kniper and Soare**, Bucarest, exhibited a fine group of Dahlias edged with Roses (Gold Medal).

Mr. A. **Clonard**, Bucarest, had a capital arrangement of seeds and implements. (Gold Medal.). Messrs. A. **Giraud and Co.**, a French firm, exhibited bottled and dried fruits. Mr. W. **Hugo**, gardener, designer and painter, showed some very fine paintings of gardens and flowers.

Basarabia and other parts of Roumania were represented by exhibits and the Horticultural Schools were well to the front with produce, but the young men they turn out, after training, are not a great success.

The show was a great success financially.

SMITHFIELD CLUB.

Throughout the week, until Friday evening, the chief interest of the agricultural world has been centred on the great show of fat stock at the Agricultural Hall, Islington, where the world's finest display of fat cattle, sheep and pigs has been seen. Farmers are also keen gardeners, so that while it is primarily the beasts stalled and penned on the ground floor of the hall that they first inspect, the vegetable exhibits in the gallery never fail to receive due attention.

It is in the gallery that the principal seedsmen have their stands. To the average gardener such seedsmen as Messrs. Sutton and Sons, Messrs. Carter and Co., Messrs. Webb and Sons, Messrs. Toogood and Sons, Messrs. Harrison and Sons, and Messrs E. W. King and Co., are known solely for the excellence of their garden seeds. But they all do enormous business with farm seeds, and it is safe to say that equal care is paid to the strains of the various farm roots and Cabbages as with, for instance, Begonias and Antirrhinums, and perhaps even more. For while with both types of seeds the trueness, vigour and yield of the strains are the subject of regular tests, the additional factor of food content is of immense importance in the farm crop. No matter how imposing the towering arrays of Mangels and Turnips, which are seen at Islington, may be, their size, symmetry and, often, fascinating colouring does not impress the agriculturist unless the guaranteed food content proportion is also present.

While these noble piles of gargantuan roots of perfect form and flat-pol Cabbages of table-top proportions are the chief features of the seedsmen's exhibits, the garden is also well catered for. Close to the broad stairway, Messrs. **Sutton and Sons** had their usual splendid display, which they embellished with vases of Cyclamen blooms, exhibition mounds of Brussels Sprouts of the highest quality, many Onions, such as Veitch's Maincrop, Sutton's Globe and Veitch's Intermediate Beet, Autumn Protecting and Christmas White Broccoli, and little Kohl Rabi of succulent appearance which contrast strangely with the huge specimens of the farm type of the same vegetable. Although it is December, and the shops have put on their Christmas dress, Messrs. **Sutton and Sons** are able to show, alongside Twentieth Century Mushrooms, Cucumbers of such quality that it would be difficult to surpass them at any summer show. The pairs of Pride of the Market Cucumbers were long and perfectly straight, perfectly matched, and their quality was ensured by the presence of the flowers which still remained at the tips of the fruits. The dishes of Winter Beauty Tomato were also of outstanding merit. Potatos formed an important feature of the exhibit, and there were excellent dishes of many first-rate varieties, including Argyll Favourite, a white, pebble-shaped tuber; Aberdeen, oval, white; The Sutton Flourball, pink, pebble-shaped; Great Scot, Majestic, Red King Edward and The Bishop.

Leeks were of especially good quality amongst the many vegetables shown by Messrs. J. **Carter and Co.**, whose Onions was also of considerable excellence. Holborn Model Leek was not only of good length and exceptional girth, but the stems were unusually firm. The chief Onions were Record, Blood Red and a very good strain of the popular Ailsa Craig. This season, many examples of Brussels Sprouts have been too large for the discerning cook—they have almost the appearance of young Cabbages—but the Sprouts staged by Messrs. J. **Carter and Co.** were ideal in appearance. They were of good, medium size, neither too large nor too small, firm and of fresh green appearance. Their Carrots and Parsnips also were of the best exhibition types. As is right and proper, Potatos were well represented. The principal varieties were Di-Vernon, and the similar, though distinct in the purple flushing, Catriona, Arran Victor, Majestic, Red King and Field-Marshal.

A number of well-flowered Cyclamen plants drew attention to the stand of Messrs. E. Webb and Sons, and from these the visitors' attention was inevitably drawn to the quality of The Conqueror Tomato, the Webb Brussels Sprouts, Reliance Onion, and such excellent Potatos as King Edward, Katie Glover, Red King and Majestic. In their extensive exhibit. Messrs. Toogood and Sons set up good mounds of Southampton Champion Onion, Crimson Globe and Southampton Black Beet, their new Scarlet Carrots and many dishes of excellent Potatos.

Beet, of splendid appearance, were shown by Messrs. E. W. King and Co., whose chief varieties were Intermediate, of almost perfect oval shape, and Dark Red. Their roots of Snowball Turnip were also of great excellence, while the Scarlet Model, Scarlet Intermediate and Early Market Carrots would also have taken high positions in any competitive show. Other noteworthy vegetables included the Prizewinner Leeks and Arran A.1 Potatos. At one end of this extensive exhibit there was a row of very good exhibition Japanese Chrysanthemums. A particularly good variety of Leek, named Leicester Hero, was shown by Messrs. Harrison and Sons, and their Brussels Sprouts fully justified the title of "XXXX." Exhibition Onions, Red Globe and Marble Top Turnips and Early Wonder Beet were also of great merit. Reading Matchless Onions, Scarlet Model Carrots, White Model Turnips, Intermediate Beets and a good selection of Potatos were attractively shown by Messrs. John K. King and Sons, while Messrs. Alex. Blatchford, Ltd., staged good specimens of Celery, Globe Beet, Onions, and particularly good Princess Mary Cabbages.

As usual, there were many exhibitors of Potatos, who set up many admirable dishes, both of ware tubers and seed-size of all the best varieties. The largest exhibit, solely of Potatos, was arranged by Messrs. Fidler and Son, who included such well-known varieties as Majestic, Red King, Eclipse, Factor, Field-Marshal and Rob Roy. Other exhibitors of Potatos included Messrs. S. Thompson and Sons, Ltd., Messrs. W. A. Graham, Ltd., Messrs. Little and Ballantyne, Mr. James Gray, Mr. Frank K. Sharp, Messrs. Isaac Poad and Sons, Mr. Herbert J. Speed, Messrs. Robert Morris and Son, Messrs. George White, Ltd., Mr. James Gardiner, Messrs. Kent and Brydon, Mr. W. J. Reid, Mr. R. W. Green, Mr. Wm. Robertson, Mr. Thomas McClure, Mr. John A. Grant, Messrs. Wm. Dennis and Sons, Ltd., Mr. W. J. Campbell, Mr. A. Findlay, Mr. George Sharp and Messrs. Pattulo, Higgs and Co.

Fruit-growers generally do not seem to attach much importance to the opportunities of the Smithfield Club Show, for this year there were only the two customary exhibitors. Messrs. Wm. Seabrook and Sons had a goodly collection of Apples, and a few specimen trees of various fruits. The Apples included handsome fruits of Bismarck, Ellison's Orange, Cox's Orange Pippin, Monarch, Rival and Rev. W. Wilks. Mr. T. A. Scarlett brought plants of Edina Black Currant, a very vigorous and fruitful variety which is said to be immune from attacks of the Big Bud Mite. He also had sturdy, well-cropped plants of Brussels Sprouts, Leeks and Potatos.

Meadow Grasses and farm cereals were shown attractively by various firms, particularly Messrs. Gartons, Ltd., and the well-known Vermorel Sprayer was shown, both of knapsack size and on wheels.

READING AND DISTRICT GARDENERS'.

The interchange of lecturers with the Bristol Society which was an annual event previous to 1914 was happily renewed on Monday evening last in the Abbey Hall, when Mr. R. L. Rogers, landscape gardener, of Redland, Bristol, gave a most interesting lecture on "Colour Planning in the Garden." He drew attention to the fact that to obtain the most pleasing results during the four seasons of the year, whether in small or large gardens, required much thought and foresight, and perhaps more than was generally given to the subject. He gave most useful and practical hints on selecting colour schemes for alpine gardens, herbaceous borders and beds, and named plants, bulbs, flowering trees and shrubs for each section. He also dealt with blue, white and golden gardens.

Several members offered their congratulations to Mr. Rogers for the charming manner in which he had dealt with his subject.

In the competition for three dishes of Potatos, distinct, there were seven entries, and some excellent tubers were shown. The first prize was awarded to Mr. A. W. Gower, The Gardens, Calcot Grange; the second to Mr. F. Haines, The Gardens, Calcot Hanger; and the third to Mr. A. H. Dow, The Gardens, Calcot Park.

In the non-competitive section, Mr. C. S. Clacy, The Gardens, Sidmouth Grange, Earley, staged a vase of Chrysanthemum blooms: Mr. A. Parker, Hazelmere, Reading, showed a collection of Apples, and Mr. J. Taylor, Highgrove Street, Reading, exhibited Potatos.

NATIONAL CHRYSANTHEMUM.

About a dozen new varieties of Chrysanthemums were exhibited before the Floral Committee of this Society on November 28, and the following awards were made :—

First Class Certificates.

Gaiety. *V.2.a.*—A large Single variety of vivid, velvety, chestnut-crimson colouring, with a golden zone around the centre. Shown by Mr. H. Shoesmith, junr.

Mrs. E. Page. *V. 2.a.*—A showy Single variety in which the golden colouring shades from the centre outwards, gradually mingling with the bright chestnut hue of the outer halves of the florets. Shown by Mr. H. Woolman.

John Hall. *II*. 1.*a.*—A big exhibition, Japanese variety of light purple colour, some of the flowers showing a mauvy-purple shade on the reverse of the florets. Shown by Mr. G. Carpenter, West Hall Gardens, Byfleet.

Tom Abbott. *II*. 1.*a.*—A large, deep, exhibition Japanese variety with an abundance of bluntly-pointed, canary-yellow florets, the reverse colour being slightly paler. A fine flower. Shown by Mr. H. J. Jones.

GERMAN HORTICULTURAL.

During the period from the 5th to the 9th of November, a large Chrysanthemum and fruit exhibition was held by the German Horticultural Society in the Berlin Town Hall. There were, besides those named, a few other exhibits, but these were in a decided minority. Many firms exhibited Chrysanthemums, including Otto Beyrodt, Hermann Rothe, Emil Pretzel, Richard Freidrich, of Berlin-Biesdorf, Heinrich Kruger of Charlottenburg, and Spielberg and de Coene of Berlin-Buchholz. Among the blooms most admired were many of English raising, such as Mrs. R. C. Pulling and Queen Mary; indeed, the nurserymen seemed to have a majority of French and English varieties.

A private exhibitor, Frau Gertrude Jeidels, of Wannsee, Berlin, showed a variety named Hedwig Heyneck, but Chrysanthemums are evidently not a German speciality. Spielberg and de Coene had a very fine exhibit of hothouse Grapes, including Alicante, Mrs. Pince, Gros Colman, and Barbarossa. The Grapes were of excellent quality. Georg Marquardt, of Zossen, showed Cyclamens, and close to this exhibit was one of cut Roses from A. Brandt, of Mahlsdorf.

An interesting exhibit of Chrysanthemums was that from the State Experiment Station at Pillnitz. All the newest varieties were here collected, and they provided a revelation of the beauty and decorative value of the Chrysanthemum at its best.

The celebrated Dahlia raiser, Kurt Engelhardt, of Dresden, had brought a number of novelties, including one destined for commerce in 1928 named Symbol. A large vase was filled with this variety, which has long, firm stems and pink flowers, fading into white in the centre.

Obituary.

Hermann Stapel.—We regret to learn of the death, on November 8, of Hermann Stapel, who was for thirty-one years Superintendent of the Parks and Gardens Department at Darmstadt. Born of well-to-do parents, Stapel was educated in Jena and afterwards at Weimar, but his love of Nature led him to adopt gardening as his profession, and he went to serve an apprenticeship in the Georgengarten in Hanover, at the same time attending the technical high school, where he obtained a degree in botany and geodesy. After a short period at Charlottenhof-Potsdam, he assisted the landscape gardener, Walter, in laying out new gardens for the Empress Frederick at Schloss Friedrichsdorf, near Cronberg, and was later sent by the Empress to the Royal Gardens at Frogmore, Windsor, for a course of study in English methods of gardening and fruit-growing. On his return to Germany, after a short further stay at Friedrichsdorf, Stapel entered the Parks Department in Berlin, later taking over the direction of the parks and cemeteries at Kottbus where he remained until 1896. In that year he was appointed to his charge at Darmstadt where he found a rich field for his energy and talent in the many large and beautiful open spaces, and in the special labours required on the occasion, for instance, of the Agricultural Exhibition of 1900 and the Horticultural Exhibition of 1925. Among the amenities of Darmstadt under his care may be mentioned the very beautiful Waldfriedhof, where now his ashes will rest. Stapel's was a fine nature, and his many friends will deeply regret the demise of one who knew so well how to combine energy and conscientiousness in work with sympathy and kindliness of heart.

ANSWERS TO CORRESPONDENTS.

Big Bud Mite.—*J. L.* The best wash for spraying Black Currants that are suffering from attacks of big bud mite is lime-sulphur, used according to directions. The bushes should be sprayed in March or April, according to the season, the best time being just when the buds have burst and the leaves are about the size of a shilling. To make sulphur wash, take two ounces of soft soap and ½-lb. of flowers of sulphur, and add gradually two gallons of boiling water; mix thoroughly and use when cool. Regarding your vines, if mildew has appeared, sulphur should enter largely into any winter dressing of the rods; it will be found to adhere fairly well if mixed with strong soapy water. Sulphur should also be used in the whitewash for the annual dressing of the vinery walls.

Iron Sulphate for Spraying.—*A. G.* For spraying purposes, sulphate of iron may be prepared by dissolving 25 lb. of the sulphate in one pint of sulphuric acid, and adding fifty gallons of water. This is for winter use only, or for spraying when the buds of vines are in a dormant state; it must not be placed in metal vessels owing to its corrosive action. You may dress your dormant vines with a tar wash made of one part coal tar, and six parts of clay; dry the clay and powder it so that it will pass through a quarter-inch sieve. Mix the tar and clay thoroughly, and add sufficient boiling water to make the mixture of the consistency of paint. Smear the mixture over the dormant rods, but avoid coating the buds themselves, and keep the mixture well-stirred during the process of application. Discretion is necessary in applying such dressings. Safer and equally good results would follow the use of Gishurst Compound; use eight ounces of the compound to one gallon of water, with sufficient clay added to give it the consistency of paint, and fill up all the holes and crevices with pure compound.

Communications Received.—B. McP.—W. J. B.—R. W. R.—F. A. A.—C. F. K.—W. L.—H. M.—H. S.—W. A.—F. G.—E. T.—G. A.—J. B.

MARKETS.

COVENT GARDEN, Tuesday, December 6th, 1927.

WE cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz.	10 0	12 0
—elegans	10 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	40 0
Asparagus plumosus	12 0	18 0
—Sprengeri	12 0	18 0
Aspidistra, green	16 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus	12 0	15 0
Cacti, per tray 12's, 15's	5 0	7 0
Chrysanthemums, 48's per doz.—		
pink	18 0	21 0
—yellow	12 0	18 0
—bronze	15 0	18 0
—white	12 0	18 0
—red	15 0	18 0

	s. d.	s. d.
Crotons, doz.	30 0	45 0
Cyrtomiums	10 0	25 0
Erica gracilis, 48's, per doz.	24 0	30 0
— — 60's, doz.	12 0	15 0
—mixed, 72's, per doz.	8 0	9 0
—nivalis, 48's, per doz.	27 0	30 0
— — 60's, doz.	12 0	15 0
Nephrolepis in variety	12 0	8 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	12 0
Pteris in variety	10 0	15 0
—large, 60's	5 0	6 0
—small	4 0	5 0
—72's, per tray of 15's	2 6	3 0
Solanums, 48's, per doz.	15 0	18 0
—60's, per doz.	8 0	10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum decorum, doz. bun.	10 0	12 0
—cuneatum, per doz. bun.	8 0	9 0
Anemones, St. Brigid, per doz. bun.	6 0	8 0
Arums (Richardia), per doz. blooms	6 0	7 0
Asparagus plumosus per bun. long trails, 6's	2 6	3 6
—med. sprays	2 6	3 0
short ,,	0 9	1 3
—Sprengeri, bun. long sprays	2 0	2 6
med, ,,	1 0	1 6
short, ,,	0 6	1 9
Camellias, white, 12's, 18's per box.	2 6	3 0
Carnations, per doz. blooms	4 0	6 0
Chrysanthemums, per doz. blooms—		
—white	4 0	8 0
—yellow	4 0	6 0
—pink	4 0	6 0
—bronze	4 0	6 0
—red	4 0	6 0
—single varieties	2 6	4 0
—spray, bronze, per doz. bun.	18 0	24 0
—spray, pink, per doz. bun.	18 0	22 0
—spray, yellow, per doz. bun.	18 0	24 0
—spray, white, per doz. bun.	18 0	30 0
—single varieties, spray, per doz. bun.	18 0	30 0
Croton leaves, per doz.	1 9	2 6
Fern, French, per doz. bun.	10 0	12 0
Forget-me-not, per doz. bun.	10 0	12 0
Freesia, white, per doz. bun.	5 0	6 0
French flowers—		
—Acacia (Mimosa), per doz. bun.	12 0	15 0
—Narcissus, Paper White, per doz. bun.	4 6	5 0
—Violets, Parma, large, per bun.	8 0	9 0
—Ruscus, green, per pad	5 0	6 0
—Solanum fruits, per pad	8 0	9 0
—Anemones, mixed, per doz. bun.	12 0	15 0

	s. d.	s. d.
French flowers—		
—Ranunculus, carmine, per doz. bun.	6 0	7 0
— — Burbaroux, per doz. bun.	6 0	7 0
— — Romano, per doz. bun.	12 0	15 0
—Roses, Saffrano, per pkt.	2 3	2 6
—Marguerite, yellow, per doz. bun.	2 6	3 0
—Violets, single, per doz. bun.	3 0	4 0
Gardenias, per doz. blooms	6 0	8 0
Heather, white, per doz. bun.	—	12 0
Hyacinths, Roman, 6's, per doz. bun.	2 0	2 6
Lilac, white, per doz. sprays	4 0	6 0
Lilium auratum, per doz. blooms	6 0	7 0
—speciosum album, per bun.	4 6	5 0
—short, per doz.	4 6	5 0
—rubrum, long, per bun	3 6	4 6
—short, per doz.	2 0	2 6
—longiflorum, long, per bun.	3 6	4 0
—short, per doz. blooms	3 6	4 0
Lily-of-the-Valley, per doz. bun.	24 0	30 0
Marigolds, per doz. bun.	3 0	4 0
Myrtle, green, per doz. bun.	1 6	2 0
Narcissus Soleil d'Or, per doz. bun.	12 0	15 0
Orchids, per doz.		
—Cattleyas	21 0	30 0
—Cypripediums	4 0	6 0
Poinsettias, per doz. blooms	24 0	30 0
Roses, per doz. blooms—		
—Columbia	6 0	9 0
—Richmond	7 0	8 0
—Madame Butterfly	6 0	9 0
—Golden Ophelia	6 0	8 0
—Roselandia	6 0	8 0
—Madame Abel Chatenay	4 0	5 0
—Liberty	6 0	8 0
—Molly Sharman Crawford	3 6	4 6
—Premier	6 0	8 0
Smilax, per doz. trails	3 0	4 0
Violets, per doz. bun.	3 0	6 0

REMARKS.—With the exception of Chrysanthemums, which have increased in quantity during the past week, and with disbudded blooms in very little demand towards the week-end, prices have been slightly on the down grade. Several other lines have been shorter, such as Carnations, Roses, Violets and Gardenias, and for the two first prices were considerably firmer to-day. Arums (Richardias), Lilium longiflorum and L. speciosum rubrum are still in fairly regular supply and remain very moderate in price, considering the unfavourable weather conditions. More Roman Hyacinths have been offered, cut and on bulbs. A few scarlet Tulips were on sale to-day, from Holland. Poinsettias are very limited in quantity, but there is little demand for them at present. Yellow and white Narcissi have been received from home-growers during the past week. White Lilac from Holland is now arriving in better condition.

POT PLANTS.

Business shows considerable improvement in this department. Many plants are now being despatched to the provinces, and large quantities will be forwarded during the next few days; the subjects most in demand are Erica nivalis, E. gracilis and E. hyemalis, in 48's, 60's and thumb pots; Solanums, Azaleas, Begonias, Cyclamens, and Chrysanthemums in 32's, 48's and 60's. Ferns and Palms are also in good demand, and an excellent selection is now on offer in various sizes.

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples, English—		
—Newton Wonder	4 0	7 0
—Lane's Prince Albert	4 0	6 0
—Bramley's Seedling	4 0	9 0
—Other cookers	4 0	5 0
—King's	3 0	5 0
—Cox's Orange Pippin, per case	20 0	35 0
½-sieve	6 0	15 0
—Blenheim Pippin, ½-sieve	8 0	5 0
Apples, American—		
—Newtowns	12 6	13 0
—York Imperials, per barrel	—	30 0
—King David, per case	12 0	13 0
—Winter Banana	13 0	14 0
—Jonathan	10 6	16 0
—Oregon. Newtown Pippin	16 0	18 0
—King's	26 0	35 0
Apples, Nova Scotian—		
—Cox's Orange Pippin, per ½-barrel	30 0	35 0
—Ribston Pippin, per barrel	23 0	26 0
—Russet	28 0	32 0
—Blenheim Pippin, per barrel	22 0	25 0

	s. d.	s. d.
Bananas	18 0	25 0
Grape Fruit—		
—Blue Goose	27 6	30 0
—Honduras	20 0	22 6
—Jamaica	20 0	22 6
Grapes, English		
—Alicante	1 6	2 6
—Colmar	1 6	3 6
—Muscat	4 0	8 0
—Canon Hall	5 0	7 0
Lemons, Messina, per case	20 0	25 0
—boxes	14 0	16 0
Nuts—		
—Cobs	1 6	1 8
—Walnuts, Grenoble, per bag	9 0	10 6
—Chestnuts, Italian, bag	20 0	27 6
Oranges, per case—		
—Valencias (Spanish)	18 0	30 0
——(Australian)	12 0	15 0
—Jaffa	16 0	17 0
—Tangerines	1 0	1 7
—Cape Valencia	23 0	25 0
Pears—		
—Doyenné du Comice, per doz.	2 0	6 0
—Californian—		
—Doyenné du Comice, ½ case	—	17 6
—Winter Nelis, per case	18 0	28 0
Pines, case	25 0	36 0

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Asparagus, Devon	8 0	10 0
—Italian	4 6	5 0
—Paris Green	7 0	9 0
—Sprue	—	1 6
Aubergines, per doz.	2 0	3 0
Beans, Madeira, per box	3 0	5 0
— Guernsey, per lb., finest	3 0	4 0
—Ordinary	1 6	2 6
Beets	4 0	6 0
Brussels Sprouts, ½-bag	2 6	3 6
Carrots, per bag	4 0	5 0
Cauliflower, per crate	3 0	6 0
Celery (washed), per doz. fans	18 0	30 0
Cucumbers, doz.	18 0	24 0
French Endive, per doz.	2 0	2 6
—Batavia, per doz.	2 0	2 6
Leeks, per doz.	2 0	3 0
Lettuce, French, round, per doz.	1 3	2 0

	s. d.	s. d.
Lettuce, French 5 doz. crates	3 6	5 0
Mint, forced, per doz. bun.	4 0	8 0
Mushrooms—		
—Cups	2 0	3 0
—Broilers	1 6	2 0
Onions—		
—Dutch	7 6	8 6
—Spanish	10 0	14 0
Parsnips, cwt.	4 0	5 0
Peas, Guernsey, per lb.	1 6	4 0
Potatos—		
—English, cwt.	5 0	8 0
—Guernsey, new, per lb.	0 4	0 10
—Azores, case	12 0	20 0
Tomatos, English—New Crop—		
—pink	6 0	8 0
—pink and white	6 0	8 0
—white	3 0	6 0
Tomatos, Canary Island	16 0	18 0
Turnips, per cwt.	3 6	4 0

REMARKS.—Business conditions are, perhaps, a shade brisker, but during the past week or so they have been very slow. The Apple trade in particular is bad, for both imported and home-grown fruits. Even at most unremunerative prices there is little or no movement. A few English Pears are available and some excellent Californian Doyenné du Comice and Winter Nelis are selling fairly well. Oranges, for the time of year, are cheap and plentiful. Grape Fruits are scarce and prices are a shade firmer. Pineapples are selling moderately well, the latest shipment being a large one. Some Apricots and Peaches from South Africa have arrived this week. Hothouse Grapes have sold rather more freely, but values remain at a steady level. Asparagus from France, Italy, with a little from Devonshire, is selling moderately well. Cucumbers, as is usual at this season, are scarce and costly. A few English Tomatos arrive each day, but their condition is not generally good, the trade looking to the Canary Islands for their requirements. Arrivals of Mushrooms have not been quite so heavy, but there is no increase in price. The shipment of Madeira Beans this weeek is comparatively heavy, but there is a good demand for hothouse Beans and prices are firm. Salads are not selling well, even the best French Lettuce, Endive and Batavia Endive selling cheaply. Green vegetables are a quiet trade, as are Cauliflowers, which are arriving mainly from France, Kent and the west of England. The Potato trade is a little more active, but values remain about the same as previously advised.

GLASGOW.

The cut flower market continued firm last week, when prices of Chrysanthemums were maintained at the former high level. Ada Brooker realised 2s. to 2s. 3d. for 6's; Pink Chieftain, 1s. 6d. to 2s.; Phyllis Cooper, 1s. 9d. to 2s.; White and Yellow Thorpe, 1s. 6d. to 1s. 9d.; Cranford Yellow and Florrie King, 10d. to 1s. 3d.; Jean Pattisson and Mary Richardson, 10d. to 1s. 2d.; Almirante, 1s. to 1s. 4d.; Dolores, 9d. to 1s.; Pink Triumph, 6d. to 10d.; Ada Brooker (specials), 6s. to 8s. per dozen; White Beauty (specials), 5s. to 7s.; Framfield Pink, Mary Morris, and Absolute, 3s. to 3s. 6d.; Thorpe, large bunches, 10d. to 1s. 3d.; small, 8d. to 10d.; and Heston White 6d. to 7d. Roses: pink, 6s. to 8s. per dozen; white and red, 2s. to 4s. Carnations, 4s.; Narcissi, 3s. to 4s.; and Lilium longiflorum, 2s. 6d. to 3s. 6d. per bunch.

The fruit market was comparatively quiet for this time of the year, and price movements were narrow and unimportant. The better qualities of Apples were scarce, Canadian Kings, Spies and Greenings being worth 44s. per barrel; Baldwin, No. 1, 36s.; domestic, 30s.; Starks 32s.; York Imperial, 28s. to 32s.; Salome, 28s.; Ben Davis, 25s. to 26s.; Delicious (fancy), 16s. 6d.; Seagrave, 15s.; and Grimes' Golden, 15s. 6d. to 16s. 6d. Recent arrivals of Jonathan were reported to be frosted, and values ranged from 11s. to 15s. per case. Valencia Oranges made 16s. to 28s. per case, according to counts; Jaffas, 14s. to 15s.; Mandarins, 1s. 3d. to 2s. per tray. Grape Fruit, 20s. to 22s. per case; Murcia Oranges, 300's, 17s' to 20s.; 360's, 15s. to 17s.; and 340's, 18s. to 20s. Tripoli Lemons, 250's, 16s.; Palermo, 300's, 20s.; Murcia, 300's and 240's, 24s.; Winter Nelis Pears, 15s. 6d. half-case; Californian, 26s. to 28s.; home-grown Grapes, 3s. 6d. per lb.; Belgian, 1s. 2d. to 1s. 6d.; and Teneriffe Tomatos, 18s. to 30s. per bundle.

In the vegetable department, Cauliflowers sold at 7s. to 9s. per crate; indoor Lettuces, 1s. 9d. to 2s. per dozen; outdoor, 3s. to 3s. 6d.; French Carrots and Turnips, 1s. 2d. per bunch; Mushrooms, 2s. 6d. per lb.; Dwarf Beans, 1s. 6d. to 1s. 8d.; Endive, 4s. per dozen; and Brussels Sprouts, 2s. to 2s. 6d. per stone.

GARDENING APPOINTMENT.

Mr. A. Aylett for the past seven years gardener to H.I.H. PRINCESS NAPOLEON, at Farnborough Hill, Hampshire, and the Chateau de Ronchinne, Lustin Namur, Belgium, as gardener to VISCOUNT FITZALAN OF DERWENT, Cumberland Lodge, Windsor Park, Berkshire. (Thanks for 2/6 for R.G.O.F. Box.—EDS.).

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THE Gardeners' Chronicle

No. 2138.—*SATURDAY, DECEMBER* 17, 1927

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Average Mean Temperature for the ensuing week deduced from observations during the past fifty years at Greenwich, 38.6.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 14, 10 a.m. Bar. 29.7. Temp. 38°. Weather, Wet.

The Spraying of Fruit Trees.

The use of carbolineum washes for the winter spraying of fruit trees, which has been practised now for several seasons, has given such excellent results that it may now be regarded as an established practice in orchard management. Needless to say, it is essential that spraying with one or other of these materials should be done during the period when the trees are dormant. Of carbolineum sprays there are many, and no doubt not a few of them are excellent. Carbokrimp is one which has been widely and successfully used. Mortegg is another, which, as judged by the results of trials recently carried out by the Research staff of a private firm,* appears to effect a very thorough control of insect pests. Comparative trials of Carbokrimp (7½ per cent.) and various proprietary carbolineum washes, including Mortegg (7½ per cent.), showed that these two washes at the strengths indicated, as well as another (Chafers No. 1 Winter Wash, 10 per cent.), protected Plums completely from the Leaf Curl caused by Aphis, and that both Carbokrimp and Mortegg prevented damage to Apples by the Rosy Apple Aphis. They proved effective also in reducing almost completely attacks by the caterpillar of the Winter Moth. The very thorough trials recorded in the *Bulletin* to which reference has already been made, appear to demonstrate conclusively that eggs of Aphides, Apple Suckers, Winter Moth and Tortricids are killed by either of these washes at strengths of 4 to 8 per cent., but in view of the fact that a higher strength is necessary to kill Capsid Bugs, a 7½ per cent. solution should generally be employed. Provided that the fruit trees are dormant, no damage will be done by solutions of this strength. Another condition for success is that the spraying should be done when the trees are dry. If they are wet the strength of the solution used in spraying them will, of course, be reduced, and as a consequence control of insect pests may be incomplete. Needless to say, spraying must be thorough and in particular must include the tips of the shoots, for it is on them that insect eggs are frequently deposited. But, after all, insect pests are not the only trouble against which those who grow fruit have to contend. This year, for example, has often seen the few Pears which have grown to full size distorted, split and blackened by Scab. Nor have Apples by any means escaped. In order to control this disease (caused by species of the fungus Venturia) the practice of spraying with lime sulphur or other suitable fungicide must be followed annually. When lime-sulphur is used it may be accompanied by lead arsenate, and the mixed spray put on the trees (Apples) just when the blossom is showing pink. Those who have the necessary resources may be able to spray a second time after the fall of the petals, but, generally speaking, if the cultural conditions are good, spraying once before the blossom buds burst will suffice to secure clean fruits. The results of spraying fully justify the labour involved, and where, as so often happens, a large proportion of such fruits as are formed are malformed by attack of insect or fungus, the gardener has only himself to blame if he does not first attend to cultural conditions and afterwards supplement his labours in this direction by adopting the routine of spraying which we have recommended. Where Peaches and Nectarines are grown out-of-doors the spraying of most importance is that which is done just before the blossom opens, and for this work Burgundy mixture is, perhaps, the best spray material, although lime sulphur does almost as well.

"The Gardeners' Chronicle" Almanac for 1928.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Covent Garden Market and the Christmas Holidays.—The addition of one day to the Christmas holidays, due to the proclamation of an extra Bank Holiday, has given rise to a curious position in connection with Covent Garden Market. It appears that when, in 1661, Charles II granted the Earl of Bedford a charter to "hold and keep" a market in Covent Garden for the buying and selling of "fruits flowers, roots and herbs," he made a condition that the market should be opened for ever on every day except Sundays and Christmas Days. However, the Covent Garden authorities, after consultation with their tenants, have agreed to close the market on December 26 and 27; consequently, for the first time in its long history the famous market will be closed for three consecutive days—the 25th, 26th and 27th.

Holland Park Hall.—It would appear that, whether or not the Royal Horticultural Society's new hall is finished by next autumn, the Society will be unable to hold any further exhibitions at Holland Park Hall, as we understand this building is being taken over by a well-known firm of motor engineers.

Snell Memorial Medal.—On the occasion of the annual meeting of the Fellows of the National Institute of Agricultural Botany, which was held at Cambridge on the 2nd inst., Sir Daniel Hall, Chairman of the Council, presented to Sir Matthew Wallace, the John Snell Memorial Medal for 1926.

Acreages of Crops of Immune Potatos in Scotland.—The following is a summary of acreages of Potato crops of the immune varieties inspected for purity in Scotland during 1927. The first three sets of figures in each case indicate the acreage showing a given percentage of purity, and the fourth set the total acreage:—Kerr's Pink (99.5 per cent and above), 8,791; (below 99.5 per cent to 97 per cent.), 1,446½; (below 97 per cent.), 283¾, total, 10,521¼; Great Scot, 6,723¾, 1,278½, 722½, 8,724¾; Majestic, 6,800, 899¼, 376½, 8,075¾; Golden Wonder, 1,670½, 62½, 14, 1,747. Ally, 1,370¾, 65¾, 12½, 1,449; Arran Consul, 498¼, 6¼, 5, 509½; King George, 413¼, 31, 4¾, 449; Tinwald Perfection, 221¾, 56½, 6¼, 284½; Rhoderick Dhu, 216, 21¼, 5½, 242¾; Arran Comrade, 206¾, 20¼, 13¼, 240¼; Abundance, 87½, 10½, 15¾, 113¾; Witchhill, 94, 5¾, 3, 102¾; Bishop, 89¼, 11, ½, 100¾; Crusader, 82, 2¾, 1, 85¾; Arran Victory, 79, 5½, ¼, 84¾; Immune Ashleaf, 58, 1¾, ¼, 60; Catriona, 50¼, 1¼, 6, 57½; Dargill Early, 49, 0, 2½, 51½; and others, 255¾, 37, 21¼, 314. Grand Totals: 27,756¾, 3,963¼, 1,494½, and 33,214½.

French Horticultural Apprentices.—After considerable efforts on the part of the organised nursery trade in France, horticulturists have succeeded in persuading the French Ministry of Agriculture to recognise and organise apprenticeship in agriculture and horticulture, and a Central Committee has been created for this purpose by the Ministry in Paris, as well as a departmental committee in each Department. The apprenticeship of young lads will probably be on the following lines: They will apply in the first place to the Service Agricole of their own Department, but will have a choice as to where they will work, and they will go for two hours weekly to an apprenticeship establishment, where they will be taught the elements of their trade in a methodical way by professional horticulturists or head-gardeners. So soon as their names have been received at the office of the Service Agricole, they will be given a certificate of apprenticeship. After studying for a certain period, the lads will enter for the first of three examinations, which will in turn give them the status of assistant gardener, gardener and head-gardener, respectively.

Roadside Trees.—It is a pleasure to learn from a statement issued by the Ministry of Transport that the planting of trees is being extended along the arterial roads of greater London, principally in the counties of Middlesex, Hertfordshire and Surrey. Along the new by-pass roads in Kent, experiments are being conducted with fourteen different kinds of trees and these experiments will be followed with great interest by arboriculturists. In east Suffolk and in Northamptonshire, trees are being planted along the principal main roads, while treeplanting schemes have been arranged by many county boroughs in the north of England. In Swansea, Cardiff, Bristol and Plymouth, similar schemes are being carried out and the planting of trees is proposed in most places where roads are being widened.

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*Contributions from the Laboratories of Murphy and Son, Ltd., London. *Bulletin* Nos. 15 and 16, 1926–7. Price 3s. net.

Pot Plants for Christmas.—Cultivators of flowering plants for the supply of Covent Garden Market are unusually busy just now, as provincial buyers are sending in orders for the purpose of securing supplies for the Christmas season. Many hundreds of thousands of plants have been dispatched this week and many more will follow during the early days of the coming week. Few growers are such successful cultivators as the market men, among whom such firms as those of Ladds, Sweet, Relfe and Mills occupy a foremost position. The principal subjects offered are Heaths, all superbly grown and represented by tiny plants in thumb pots up to big specimens in 32's. Erica gracilis, E. nivalis, E. hyemalis, and a smaller quantity of E. melanthera, make a fine show in the various stands and warehouses. Chrysanthemums also constitute a large item, while Begonia Gloire de Lorraine and B. Mrs. Peterson, with its bronzy foliage, are contributed in excellent condition. Cyclamens and Cinerarias are equally good, while Lilium longiflorum and Poinsettias are also offered in pots. Hyacinths made their appearance about a week ago and large quantities are promised for next week. These are the large-flowering varieties and quite independent of the Roman Hyacinths grown in small boxes in the same way as the scarlet and yellow Tulips. Solanums, with their scarlet fruits, are also popular, and those grown in sixty-sized pots appear to be even more popular than those grown in 48's. There is a large demand at this season for non-flowering plants, consequently growers are sending in thousands of Palms of various sizes, Ferns in many sizes and great variety, Araucarias and Aralias.

Chelsea Trees Respited.—Trees in London, and, indeed, in every other town, are precious things, and not to be lightly cast away, so we are glad to learn that the authorities have decided to stay their hands in regard to the old trees in Cheyne Walk, Chelsea. At the moment, opinions differ as to the safety or otherwise of these old trees, and until this is settled it is surely well to allow them to stand. A tree that from age or any other cause has become a danger should, as a matter of course, be at once removed. We are also glad to learn that if the old trees are removed it is intended to plant new ones.

Aalsmeer Flower Show, 1928.—To inaugurate the opening of a new and large flower market in Aalsmeer, Holland, a big exhibition is being arranged to take place on April 17 next. Those who have visited the quaint little town of Aalsmeer know that its prosperity depends upon the cut flower industry it has developed. Forced Lilac, Roses, Dahlias, Chrysanthemums, Cyclamens and Hydrangeas are a few of the subjects cultivated extensively and well at Aalsmeer. There are already two auction markets where the flowers are sold to buyers who dispatch their purchases to all parts of Europe. The sales are conducted in the usual, quiet, Dutch-auction fashion, and are invariably interesting to a British visitor and especially to one who has a knowledge of the conduct of business in Covent Garden Flower Market. We believe the new market is the third to be erected. It has a floor space of 2,500 square metres. Only Aalsmeer florists and exporters will be allowed to take part in the general exhibition in April, but novelties will be accepted from other countries than Holland, and will be heartily welcomed. It is only in regard to novelties, the Jury, and the Committee of Honour, that this exhibition will be of international character. Full particulars regarding the exhibition of novelties in flowers and plants may be obtained from Mr. J. C. Mensing, Aalsmeer, Holland.

Roumanian Department of Horticulture.—The Department of Horticulture in Roumania, founded by the late Professor Stefanescu, has been in abeyance since his death, its functions having been nominally taken over by the Department of Viticulture under the Ministry of Agriculture. The Department has now, however, been revived, and a Director has been appointed in the person of Mr. R. Georgian, formerly Director of Viticulture. It is largely owing to the sympathetic efforts of the present Director of Viticulture, Professor Teodorescu, that the horticultural department has been reinstated, and Roumanian horticulturists are feeling very grateful to him for the assistance he has rendered.

Mr. Frank Reader.—Everyone who has had dealings with the Royal Horticultural Society during the past quarter-of-a-century deeply regrets that Mr. Frank Reader is retiring at the end of the year from the position of Chief Cashier. Mr. Reader has made many friends and no enemies during his long tenure of office. He has been one of the Society's best assets, for like his friend, the late Mr. S. T. Wright—so long Superintendent of the Society's Gardens at Chiswick and Wisley—he has a charming and unruffled personality. Always smiling, Mr. Frank Reader has, however, experienced domestic sorrows—known only to personal friends—that would have dimmed the enthusiasm of many a younger man. Through periods of evil and good report he has served the R.H.S. with unswerving loyalty and unfailing ability, and thoroughly earned a happy retirement; but he will be sadly missed at Vincent Square. It is because of his many fine qualities, and with the hope that his remaining years may be rendered as comfortable as possible, that a Committee has been formed for the purpose of presenting him with a testimonial. The Presidents are Sir Jeremiah Colman, Bt., and Mr. A. G. Merryweather; Mr. William Cuthbertson is Chairman; and Mr. George Monro, 4, Tavistock Street, W.C.2, is Secretary and Treasurer, and to him all donations should be sent. The members of Committee are:—Mr. P. R. Barr, Mr. E. Beckett, Mr. J. S. Brunton, Mr. E. A. Bunyard, Mr. C. H. Curtis, Mr. C. G. L. DuCann, Mr. C. Engelmann, Mr. T. Hay, Mr. G. W. Leak, Mr. Courtney Page, Mr. J. MacDonald, Mr. A. W. Metcalfe, Mr. L. de Rothschild, Mr. L. G. Sutton, Mr. P. D. Williams, Mr. E. H. Christy (President, National Sweet Pea Society), Major G. Churcher (President, National Gladiolus Society), Mr. H. T. Mason (President, British Carnation Society), The Hon. Sir John H. Ward, K.C.V.O. (President, National Chrysanthemum Society), and Mr. H. R. Darlington (President, National Rose Society). Mr. Reader was born "on the land," and in his youth became a teacher. The late Rev. William Wilks induced him to relinquish that career and take service with the Royal Horticultural Society in 1890. Mr. Reader has therefore, been with the Society for nearly thirty-eight years. He has assisted in developing its Fellowship from 1,000 to 25,000, and its income from £3,500 to £56,500 annually. Although Mr. Reader has been Chief Cashier to the Society, he has also been much more—a friend and helper to every Fellow and every exhibitor who required help. Whether it has been a member of the Council, a humble Fellow up from the country, or a fretting exhibitor who was in trouble—he has been treated kindly by Mr. Reader and made to feel for the moment that his particular case was the only one! It is to consider these services, which have been accepted for all these long years, but never publicly acknowledged, that the present Committee has been set up, and everyone who has been asked to join it has regarded the invitation as an honour and a privilege. The case for acknowledgment is more than clear in the mind of every horticulturist who has come into contact with Mr. Reader, and we feel sure, by the voluntary response already made (£165 to date), that a very handsome sum will be forthcoming. This testimonial is, of course, independent of anything the R.H.S. does for Mr. Reader, who has merited every honour and recognition the Society can bestow.

MR. FRANK READER.

Horticultural Exhibition at Bremerhaven.—The Bremerhaven (Forth Germany) horticultural exhibition, which took place this year in September, coincided with the centennial festivities of the town, and was a great success. The exhibition, which was held in the new Town Hall, demonstrated afresh the great interest taken in gardening by the local amateurs, and in order to enlarge the scope of the show, small holders were invited to bring evidences of their industry and skill. The florists' section was also very attractive,

Royal Caledonian Horticultural Society.—The latest issue of the *Transactions* of the Royal Caledonian Horticultural Society (Vol. 11, Part 3) is of more than usual interest as it contains a particularly useful account of "Horticulture in Public Parks," by Mr. W. W. Pettigrew, Chief of the Manchester Public Parks Department. Other articles deal with "Waste and its Prevention," by Mr. W. J. Thomson; "The Rock Garden," by Mr. F. Fanner; "A Survey of the Fruit Range," by Mr. W. E. Murray; "Grasses in Relation to Horticulture," by Dr. W. G. Smith; and an instructive resumé of "The Educational value of Horticultural Exhibitions," by Mr. Adam Knight. The Report of the Council for 1926 is included, together with a list of the names and addresses of members.

Banffshire Field Club.—The members of the Banffshire Field Club listened recently to a delightful address delivered by the Rev. Dr. Bruce, retired parish minister of Banff. Dr. Bruce, who was in a reminiscent mood, dealt particularly with the beginnings of the Banffshire Field Club, pointing out the intellectual benefits the members derived from such an association. They learned of the life of the frog, the work of parasites, the fertilisation of the egg, the habits of the cuckoo and the tern, the wonderful annual migration of swallows, redwings and fieldfares. Intensely attractive to them was the biology of the seasons, with the wonderful periodicities of spring and its inrush of new life, filling the ditches with millions of tadpoles, and the hedges with thousands of nests; of summer and the great preponderance of reproduction and its lovely pigmentations; of autumn and its seed scatterings and showers of gossamer; and finally of the secrets of hibernation in winter of moles and squirrels. He referred to the great minds who led the way forty-six years ago when the Banffshire Club was formed. Sheriff Scott Moncrieff was the first President, and Mr. James Spence, English Master at the Academy, the first Secretary. With these were such stalwarts as Dr. Ramsay of the *Banffshire Journal*; Dr. Milne, Schoolmaster of King Edward School; and Dr. Cramond, the distinguished antiquarian of Cullen. Their first excursions were mainly geological, chiefly to the cliffs, at Gamrie and Portsoy, in search of fossils and evidences of the ancient glacial period. Dr. Mackie, of Elgin, took them to see the famous Rhynie plant bed in the quarry at Auchindoir, which he discovered, and which belonged in the middle age of the Red Sandstone period. Dr. Mahood, Duff House, led them on visits to the Jurrasic clays scattered along the coasts, and brought by glaciers from the Cairngorms to Boyndie and to Plaidy. Dr. Horne, of the Geological Survey, who worked for years in the Orkneys, gave them some delightful papers, beautifully illustrated, on a singular phenomenon along the shores of Scapa Flow, which showed a dark green diabase formed by an ancient flow of lava from some old Orkney "Vesuvius." He regretted that the science of geology was less cultivated nowadays in young Field Clubs. To him (Dr. Bruce) it was a subject of undying interest. They also pursued botanical studies in those early days, and found Banffshire full of interesting species of plants. At first he himself guided excursions to the Den of Eden and the Haughs of Forglen, and to the marine flora at Macduff. Mr. John Yeats and Dr. Mahood excelled latterly in the botanical excursions and gave them weekly walks and monthly journeys to hills and dales and river banks. One summer, the Rev. Dr. Playfair, of St. Andrews, was with them for the whole of that period, and added greatly to their botanical interests. This being the annual meeting of the Club, Dr. C. S. McPherson, the Secretary, reported that the Club had had a very successful year, with several excursions to different parts of Banffshire, including Cullen House, of great historical interest. The meeting concluded with warm votes of thanks to Sheriff More, the President of the Club, who was in the chair, to Dr. C. S. McPherson, the Secretary, and to Dr. Bruce, for his admirable and most interesting address.

Glasgow Flower Show, 1928.—At the meeting of the Glasgow and West of Scotland Horticultural Society on Wednesday, the 7th inst., Mr. Joseph Dobson, the new Chairman of Directors, made an encouraging statement regarding the negotiations which had taken place with the Kelvin Hall Committee regarding next year's flower show. The proposed arrangement is similar in its chief details to that which existed in 1925. Briefly, it means that the Corporation will provide the prize money, and the Society will undertake the work of preparing the schedule and arranging the exhibits. The Committee's suggestions have to be endorsed by the Town Council, but Mr. Dobson entertained little doubt that the show would be promoted jointly by the Society and the Corporation.

Mr. James Cairns.—The many friends of Mr. James Cairns, who has presided over the gardens of the Earls of Wharncliffe, at Wortley, near Sheffield, for the past twenty-five years, will be pleased to hear of an improvement in his health. Mr. Cairns recently underwent a serious operation, and the result has so far been satisfactory.

Balkan Flora.—On Thursday, December 8, at a meeting of the Dublin Naturalists' Field Club, Dr. R. Lloyd-Praeger gave a most interesting and entertaining address on "Botanising in the Balkans." The main object of his visit to the Balkans was to make an exhaustive study of the genus Sempervivum, although, naturally, many other objects of interest arrested the attention of this keen observer. Pointing out the resemblance of the Swiss and Bulgarian floras with regard to genera, he noted that the species differed in the two countries. Plant migrations from the east, it was stated, had centred in the Balkans, whence a re-division had taken place, making this area, as it were, a botanical clearing house. Maidenhair Fern was found growing in but one spot, and that on the only place where moist limestone rock was to be found. After many references to places of interest visited, difficulties of travel, and unsuitable accommodation on such an expedition, in which for the greater part of the time he was accompanied by Mr. W. B. Turrill, of Kew, the lecturer concluded with an interesting account of the return journey, by air, and the landing at Croydon.

Appointments for the Ensuing Week.—Monday, December 19: Birmingham Gardeners' Mutual Improvement Association's lecture. Wednesday, December 21: Royal Gardeners' Orphan Fund meeting; Sheffield Chrysanthemum Society's smoking concert.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Vine Culture and Wine making in South Australia.*—A friend who is thus engaged gives me some interesting particulars of his practice in that fine climate. Alluding to the endless variations caused by climate on the Grape, he says that those of Andalusia have such an excess of saccharine matter that the manner in which they push the fermentation would change the more delicate Grapes of France to vinegar. Their climate (South Australia) resembles Spain in its general temperature, and its greater aridity tends to produce even a richer juice than that of Spain. Their most productive Grapes are of poor quality; and even a good Grape-grower on a rich alluvium will yield a good crop of superior wine to that grown on a dry stony hillside. The general practice there is to consider quantity rather than quality, which he thinks wrong, as their poor wine will be unsaleable, besides the loss from the high price of casks there. The Grape in cultivation is the Verdulio (Madeira) and the wine decidedly a Madeira, requiring the same treatment to ripen it—a high temperature and agitation. (I lately tasted some of the wine, the most delicious I ever drank). It is high flavoured, and sweeter than common Madeira. He is erecting a place for storing it, to ripen quicker, expecting to have it as ripe in two years as in four by the ordinary process. He carried out a great variety of the best plants collected in France, Spain and Madeira, but intends to graft most of them with the Verdulio. He makes also a red wine, of a mixture of claret and Rousillon Grapes, which at one-year old sells at 5/- per gallon. Their highest fall of rain since 1839 was 30·63 inches in 1851; the lowest 17·05 inches in 1841. The highest previous to 1851, was in 1846, 26·84 inches. *J. Stewart Hepburn, Colquhalzie, Auchterarder, Perthshire. Gard. Chron., December* 18, 1852.

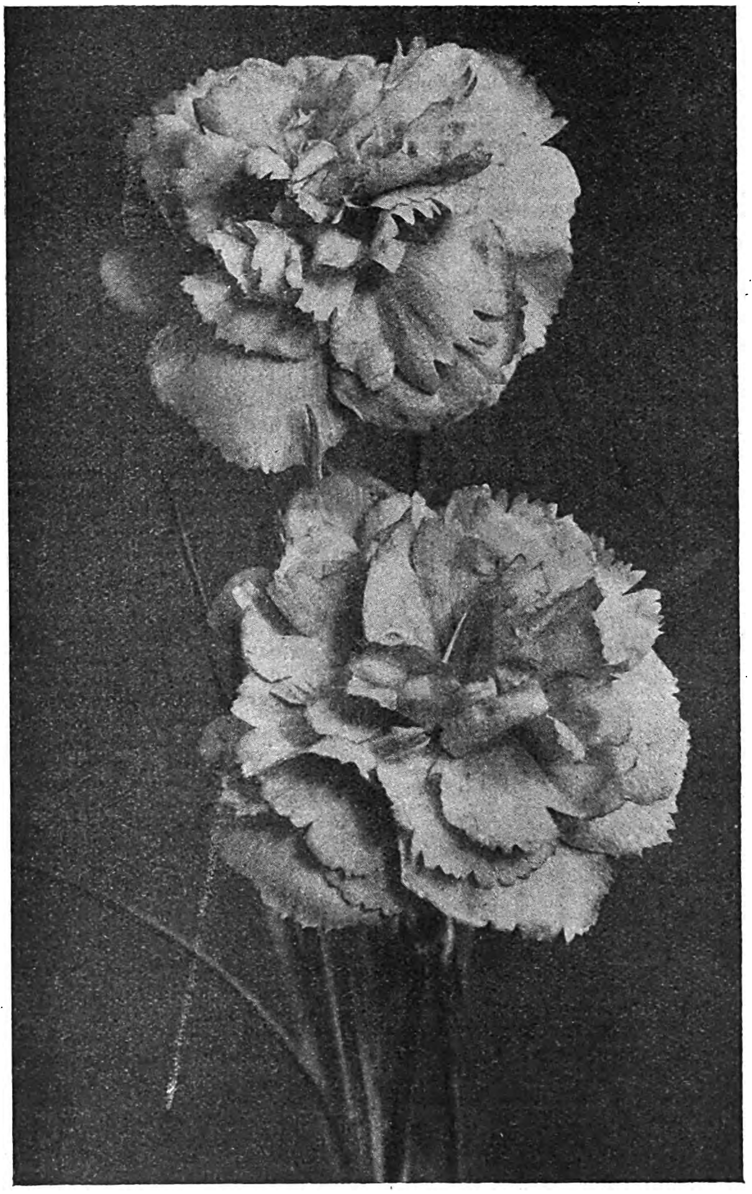

FIG. 224.—CARNATION MELCHET BEAUTY.

R.H.S. Award of Merit, Nov. 29. Flowers chocolate, faintly striped with vermilion. Shown by Messrs. Stuart Low and Co. (see p. 452).

Publications Received.—*A New Orchard and Garden*, by William Lawson, reprinted from the third edition; The Crescent Press, Ltd., 11, Fitzroy Square, W.; price 12/6.—*Gardening in Practice and Theory*, by F. W. Miles; Gibbs, Bamfort & Co., Manchester Street, Luton; price, 3/6.—*While Memory Lives*, Twelfth Annual Report of St. Dunstan's, Inner Circle, Regent's Park, N.W.1.—*Das Kakteenbuch*, by Walter Kupper; Verlag der Gartenschoenheit, Akazien-Allee, 14, Berlin-Westend; price Mk. 9.50.—*Polperro Proberbs and Others*, by F. T. Nettlenghame; Polperro Press, Polperro; price 1/6.

The Week's Work.

THE ORCHID HOUSES.

By J. T. BARKER, Dunstable, Bedfordshire.

Sophronitis grandiflora.—This delightful Orchid is now in bloom, and as its brilliant flowers are always admired those who are fortunate in possessing fine varieties should take great care of them, as they will be of great value as time passes, because the species is not imported now in quantity. As the flowers are produced on the partly-made pseudo-bulbs, care should be taken that no water lodges in the crown of the growth as it may set up decay, both of the flower and the growth. When growth is complete, the plants should be allowed to rest in a cool house, where they may remain during their flowering season, but even then they must not be allowed to suffer for the lack of water at the roots. Plants in need of new rooting-material should not be potted until the longer and brighter days arrive and fresh roots are developing from the new growths.

Sophronitis Hybrids.—The hybrids of Sophronitis are numerous; some are of small growth and others quite large. They have no particular season of flowering as, owing to the different parents used, one or the other of the hybrids is always in bloom. In a group of plants of such varied parentage it is obvious that there is much diversity constitutionally. Some are considered to be bad growers, while others are free and robust. The majority thrive in a light, warm position in the Cattleya house, while the Sophronitis parent delights in the temperature of the cool or intermediate house. The hybrids are best grown suspended beyond the reach of water from the syringe and where they may enjoy all the light possible. They should be watered judiciously at all seasons, as the young growths decay and turn black if the compost is watered indiscriminately. Some of the hybrids have fine roots, and others thick ones; the latter, as a rule, are of a more robust nature than those with finer roots, therefore they may be grown in larger receptacles and the rooting-medium may be used in a coarser and rougher condition. Over-potting must be guarded against, as even the most robust growers are not capable of pushing their roots through thick masses of material. In most cases the flowers are vividly coloured, but some have flowers of a yellow hue. The repotting of any of these hybrids is best deferred until the spring.

THE KITCHEN GARDEN.

By R. H. CROCKFORD, Gardener to THE RT. HON. LORD WAVERTREE, Horsley Hall, Gresford, N. Wales.

Asparagus.—Where very early dishes of this much esteemed vegetable are required, forcing should now commence. Strong crowns are necessary for this purpose, and these should be lifted carefully from the open ground, or obtained from a reliable source. A temperature of about 55° is suitable for the production of good, succulent stems. Excellent results may be obtained by the use of agentle hot-bed consisting of equal parts of manure and leaves; on this place a layer of rich soil on which to spread the roots. Cover the roots with about three or four inches of friable compost, through which the heads of the Asparagus will quickly appear. Where a forcing or a Mushroom house is available a hot-bed is not necessary as the roots force quite easily if arranged in these structures and grown under similar conditions to those already advised above. But even in such houses the crowns start much more readily if a small quantity of sweet, fermenting material is used. The soil should always be kept in a moist condition, and warmed water used at all times. Keep a sharp look out for slugs and woodlice, as these pests are particularly fond of the young, tender shoots. When the growths appear above the soil they should be lightly sprayed daily with tepid water.

Hot-beds.—Where manure and leaves are available these should be thrown together in a heap to heat, and turned twice at intervals of about ten days so as to be in a suitable condition by the New Year, when a start should be made to form the necessary hot-beds for growing early vegetables and salads, such as Carrots, Radishes, Lettuces, early Peas, and Potatos.

General.—During very bad weather, when work is impossible outside, the root-store should be examined and all specimens showing signs of decay removed. All tools should be overhauled and oiled, especially those that are now not frequently in use. Pea and Bean sticks may be prepared and tied into bundles of various sizes. Labels may be made and painted, seed Potatos set up in trays and placed in a light, frost-proof place, so that the sprouts become sturdy by the time the sets are required for planting. Such jobs as mending and making seed and cutting boxes may all be done at these times. Soils, etc., may also be mixed in readiness for seed-sowing, thus saving valuable time when the busy season comes along.

PLANTS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Cool Greenhouse Plants.—Schizanthuses, Clarkias, Godetias, or any annuals that are being grown to produce flowers during the early spring, should be transferred to larger receptacles when rooted sufficiently to allow the work to be carried out forthwith. All these are excellent plants for the amateur to grow or, indeed, for anyone who can find room for them, for the cooler they are grown the better will be the results. Grown under these cool conditions, however, great care must be taken in watering them, and the house or frame should be ventilated freely on every possible occasion.

Lapagerias.—Now will be a suitable time to unfasten the growths from the roof wires, thin them out and thoroughly clean and carefully tie up the remainder. Lapagerias give the best results when grown in a restricted border; if the roots are allowed to ramble at will, many strong suckers may appear where they are the least expected, and others are destroyed by slugs, which are very partial to the young shoots. An excellent compost for Lapagerias consists of good medium loam and rough peat, with sufficient coarse sand added to render the compost open, but where a top-dressing only is necessary the compost may be used in a finer state. Where the compost has to be renewed the work should be done before the plants are trained into position.

Hoya carnosa.—This will need much the same treatment as that recommended for Lapagerias. It will flower most profusely when grown in a restricted border and fed liberally when the flower trusses appear.

Allamandas.—These stove or warm greenhouse subjects should be pruned, cutting the shoots back to three or four eyes. Where insect pests have been troublesome, the remaining growths should be cleansed with an insecticide. After pruning, the roots may be kept comparatively dry until new growths are forthcoming.

Salvia splendens.—As these plants pass out of flower they should be cut slightly back for the purpose of obtaining strong shoots to be used for cuttings. Save only those plants that have not been used for grouping in the mansion. Salvia splendens is frequently attacked by red spider, and the pests should be kept in check by spraying the plants occasionally with XL All.

General Remarks.—At this season of the year plants need all the light available, therefore the roof-glass in all the plant houses should be kept clean. In gardens situated near large towns it will be necessary to wash the glass at frequent intervals, especially after fog. The interior of these houses should also be cleansed and the walls lime-washed.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD, Wrotham Park, Barnet, Middlesex.

Sweet Cherries.—The pruning and regulating of the branches of sweet Cherries should be completed before the weather becomes very cold and frosty. The treatment differs from that given Morello Cherries, as they fruit upon spurs and young, two-year-old wood. Keep the main fruiting bunches sufficiently far apart to allow free access of sun and air during the growing and fruiting season. If the trees were given proper cultural treatment during the past summer, very little pruning will be needed now beyond shortening spur growths and the young shoots required for extension or to replace faulty branches. Take care not to damage the bark when securing the branches, and see that all old ties are relaxed as a prevention against gumming. Choice Cherries deserve attention and good wall space; on western aspects the fruits attain a large size and are easily protected from birds.

Cordon Trees.—Cordon trained trees bear very heavy crops of large fruits when carefully attended to in the summer months in regard to pinching the fore-right and other shoots not required for extension. If the trees are planted eighteen inches apart in soil containing plenty of lime and brick rubble, and made moderately firm, growth will be strong and should soon produce good fruits.

Apricots.—When pruning Apricots, cut back fore-right growths to two or three buds, and endeavour to secure a large number of fruit buds and spurs as close to the wall as possible. Lay in young shoots as may be required for filling up gaps and to replace any of the branches that show signs of gumming. Young trees that may have made very strong growths should have their long leading shoots shortened back to the firm and better-ripened portion. In some cases the roots should be lifted and replanted. When preparing stations for new trees use good, turfy soil, old mortar-rubble and burnt earth. The soil for Apricots should not be too heavy and rich.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to COLONEL SPENDER CLAY, M.P., Ford Manor, Lingfield, Surrey.

Pot Vines.—If the buds on the early vines are developing, the temperature may be advanced to 55° on cold nights, and 60° on mild ones, but the latter figure should not be exceeded until the vines approach the flowering stage. When the leaves begin to unfold, discontinue syringing the vines, and supply atmospheric moisture by turning the fermenting material (which will soften the effects of fire-heat), and by sprinkling water on the paths and borders every morning. Guard against spilling water on the hot pipes, as this produces a cloud of steam that is prejudicial to the young foliage. So soon as the bunches commence to open their flowers, the temperature may be raised to 65° at night and 75° by day, with an advance of a few degrees when the sun breaks through. Atmospheric moisture should then be slightly reduced and advantage always be taken of the maximum temperature for fertilising the flowers. When set and swelling, the bunches on each vine should be reduced to five or six, if good, and to seven or eight if small, when thinning may be proceeded with. From this time forward, rich top-dressings and generous feeding will play a very important part in carrying the Grapes to early maturity. To this end the stimulants should be gradually increased in strength and quantity. In the management of laterals, the object should be a full spread of healthy foliage; all shoots, as a matter of course, will have been stopped at the first joint beyond the bunch, and if any space is left, leading laterals should be tied down, while minor laterals may be pinched and regulated in the ordinary way. Vines started this month require similar treatment to those started last month.

Grapes.—Grapes still hanging on the vines should be examined frequently and have all decaying and mouldy berries cut out. The night temperature in such houses should be kept at about 45°, and when the weather permits of it being done, liberal ventilation should be afforded, but in wet, foggy weather the ventilators are best kept closed. Examine the Grapes in the Grape-room at least once a week, and keep the temperature about 43°.

Late Vineries.—Prune and cleanse late vines, removing the top soil of the border down to the roots and re-surfacing with sound loam, lime rubble, bone-meal, and a little vine manure. Examine the borders and afford water if necessary. Keep the house cool and airy to ensure so long a rest to the vines as possible. Select shoots of medium strength for making vine eyes and lay them in soil at the foot of a wall for the present.

THE FLOWER GARDEN.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

General Remarks.—With the advent of the New Year, it will be necessary to commence propagating stocks of plants for summer bedding, and for this purpose stock plants should be introduced to a warm house, where they will be encouraged to make fresh growth to provide a supply of cuttings. They include Fuchsias, Heliotropes, Abutilons, Iresines and many other plants usually used for summer bedding. Where it is desired to raise quantities of plants from seeds, there should be no delay in ordering the necessary supplies, as it is essential to sow many of them towards the middle of January. These include such popular subjects as Begonias, both fibrous- and tuberous-rooted varieties. The fibrous-rooted section, as represented by the many fine semperflorens varieties, is deserving of more general cultivation, as there are very few plants so indifferent to varying weather conditions. Verbena venosa is easily raised from seeds and should be more generally used, either alone or in combination with grey-foliaged plants, or the pale yellow Calceolaria amplexicaulis. The many fine varieties of florists' Verbenas should also be more generally grown, as they are easily raised from seeds.

Work in Bad Weather.—During wet and inclement weather opportunity should be taken to prepare and paint flower stakes, tying them into bundles of different sizes ready for use during the coming season. Branching sprays of Hazel, or similar material, should not be overlooked for use in supporting slender-growing herbaceous plants; such material is more suitable than ordinary flower stakes, for if inserted early, the shoots will grow up through them and arrange themselves in a natural manner. Continue to collect leaves, but do not allow them to lie in heavy drifts and spoil the grass. Turn over leaf-soil and compost heaps, for the more frequently they are turned, thus allowing air to get in, the more quickly will they decay and become fit for use. Heaps of garden rubbish should receive a dressing of lime. All ashes resulting from the burning of woody rubbish should be secured while dry and kept under cover. Lawns should be swept and rolled as weather and surface conditions permit.

Crinums.—Several species and varieties of Crinum are generally hardy when planted in warm borders at the foot of walls; they include, among others, C. longifolium, C. Moorei and its variety album, also C. Powellii and C. Powellii var. album. The last two are undoubtedly the best for general garden purposes, and in the south, at least, are hardy in the open border. Where suitable conditions admit of their cultivation, they should be more generally planted, for they flower in wonderful profusion over a long period, and apart from their decorative effect in the garden, they are excellent as cut flowers for house decoration. They are strong-growing plants, requiring a deep root-run and rich compost. If the natural soil is not good, the planting sites should be excavated to a depth of three to four feet, placing a layer of rough material in the bottom to afford ample drainage, for during their growing season Crinums enjoy ample supplies of water at the roots.

Amaryllis Belladonna.—Of this fine plant there are several varieties, varying in their period of flowering and depth of colour. These may still be planted in well-drained soil, at the foot of a warm wall. In their season they are very beautiful and invaluable for a supply of cut flowers. The usual advice to plant them at least eight inches in depth is quite wrong, for unless the bulbs are near the surface they fail to flower; the same observation applies to Nerine Bowdeni, which flourishes in similar situations. The writer has known several plantings of these subjects fail to flower owing to their being too deeply planted.

Fatsia japonica.—Commonly known as Aralia japonica, and a popular pot plant for market, Fatsia japonica is much hardier than is usually imagined; it is a very handsome evergreen, which succeeds perfectly in and around London, growing well in open or partially-shaded places. It makes huge specimens, and when it produces its large panicles of ivory-white flowers towards the later half of October and in the beginning of November, it presents a striking effect. Where it is hardy it should be more generally used for planting. It may be raised from seeds, ordinary cuttings and root cuttings.

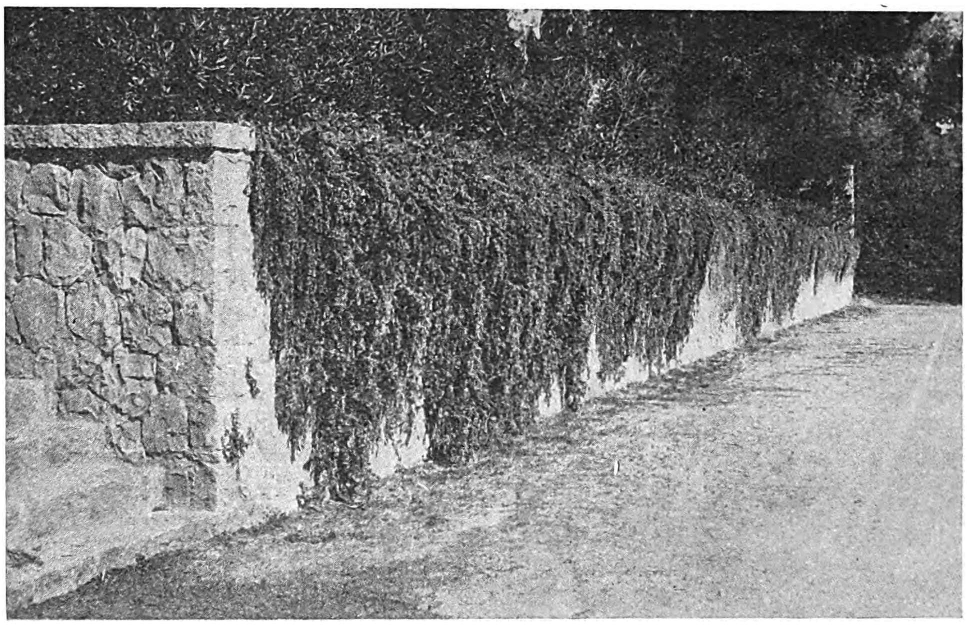

FIG. 225.—ROSMARINUS OFFICINALIS VAR. PROSTRATUS, AT LA MORTOLA

(see p. 483).

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Early Vineries.—The early vines should be pruned, cleansed and made ready for another season, and on the thoroughness with which the cleansing process is carried out will, to a great extent, depend the success of next season's crop. Where mealy bug is present no efforts should be spared to rid the house of this insect, as its effects are so repulsive on both foliage and bunches that the latter are sometimes rendered unfit for use. Fumigating with hydrocyanic gas at intervals, while the vines are dormant, has done much to reduce this pest, but it is so tenacious of life that it seems to evade all attempts at extermination. Its destruction may be carried on later by touching each spot of white, woolly matter with a small brush dipped in methylated spirit and endeavouring to avoid re-infection from other houses. When the border has been top-dressed and everything made clean and tidy, leave the ventilators open night and day until the date on which it is usual to close the house.

Broccoli.—Supplies of these are at present restricted, but where a late autumn variety, such as Sutton's Protecting, is grown, good heads are still available if care has been taken to cover the hearts of the plants with their own foliage during frosty weather. Well-grown plants of Early White on a west border are now showing a few hearts also, and a weekly run through them, closing all, or most, of their outside leaves over them, keeps them safe from several degrees of frost as well as cleaner than they would be if exposed to the light. In colder districts it is a good plan to "heel over" the later varieties of Broccoli, with their heads to the north, and partially cover up the stems with soil in the process, as this method prevents the stems from suffering during hard frost and shades the younger foliage from the strong sunshine that often follows frost; but in the milder western districts this is not necessary, as we rarely experience frost severe enough to do the Broccoli crop any harm.

Chrysanthemums.—The great annual display made by these most valuable winter-flowering plants is again drawing to a close, and although a number of late varieties keep up the display for a few weeks longer, preparations must be made at an early date for next season, and cuttings of varieties required for large blooms inserted so soon as they can be procured. The many charming varieties of Singles and Anemone-centred varieties are most useful as cut flowers and have now gained a place in nearly all collections, as these, along with naturally-grown Japanese and Incurved sorts are more easily managed than the large, disbudded blooms. Cuttings of the Singles and Anemone-centred varieties should be taken when available, but in their case the time is not so urgent, and quite useful plants of most varieties may be grown from cuttings inserted in February or March. Last season, cuttings of Framfield White, grown and flowered in pots, were put in early in January and grown on in the usual way, while more cuttings of the same variety which had been grown and flowered in the open border were inserted during the first week in March. The latest inserted cuttings flowered several weeks ahead of the pot-grown ones; in fact, they were nearly over in the outside border, before the others, which in due course had been transferred to a cold house, were showing colour, thus proving that the earliest cuttings do not always flower first.

ALPINE GARDEN.

SOME DWARF CISTUSES.

Cistus Clusii is one of the dwarfest of the Cistuses and one that might be more often seen in rock gardens. It is a very distinctive little shrub with small, narrow, leathery, dark green leaves, and a stature that does not often exceed twelve inches. The habit, moreover, is compact, and the cup-shaped, white flowers, about one inch across, and with a glow of yellow at the centre, are yielded in extraordinary abundance. This is always the first of the Cistuses to come into bloom with me, flowers often appearing in mid-April, and a succession is maintained throughout the spring and the greater part of the summer. C. Clusii, in my experience, is quite as hardy as any of the more reliable species.

If rather more tender than the foregoing, C. florentinus never suffers any serious injury here, provided it is in poor, gritty or rocky soil. Said to be a natural hybrid between C. monspeliensis and C. salvifolius, this shrub partakes of the character of both parents, the leaves being long, narrow and dull green, with a good deal of down on both sides, especially when young. The wood and foliage of the year have also the stickiness of C. monspeliensis. The white flowers, which appear from midsummer onwards, are much like those of C. salvifolius. This hybrid does not usually exceed three feet, and in a fully exposed situation will often assume a more or less trailing habit which is delightful in the rock-garden.

C. salvifolius may also be included among the dwarfer species. It is not generally seen much above two feet, and is characterised by a peculiarly compact, shrubby habit. The rounded, Sage-like leaves are a pale, downy green, and the prettily-cupped, white flowers one inch across, have a yellow stain at the base of the petals. The stature and habit of C. salvifolius will vary considerably according to conditions, both in the garden and on its native hillsides along the Mediterranean. In some parts of southern France I have seen this species covering rocky knolls in the open and under the shade of Pines, with a close, prostrate carpet of growth no more than three inches in depth, the effect when covered with bloom suggesting Burnet Roses dwarfed by poor soil and exposure to sea winds. I have a number of cuttings of this carpeting form well-rooted, but it remains to be seen whether they will retain that habit in our gardens.

C. platysepalus, which has not exceeded thirty inches with me, is a remarkably beautiful species with a distinction all its own. I have not seen it in its native home, but Mr. R. C. Notcutt tells us that it comes from Crete, and that it is allied to C. hirsutus. It is a much-branched, twiggy shrub of compact, rounded habit, with narrow leaves fully two inches long, of a bright green, which assume a bronzy tint in winter. C. platysepalus is an early bloomer, often commencing before mid-May, and the terminal flower clusters yield a long succession of blossom with amazing prolificacy. The blooms, well over two inches in diameter, are pure white with a yellow basal stain. In the clarity of their whiteness, their texture and size, the flowers of C. platysepalus always appear to me to be more striking than those of any of the dwarfer Cistuses.

VERONICA CHATHAMICA.

There is no better shrubby Veronica for the rock garden than this, and for such a purpose it is one of the best of all flowering shrubs. It may not be quite as hardy as some would wish it to be, but its perfectly prostrate habit renders protection an easy matter where such is needed. Here it does not suffer to any extent from 15° of frost.

V. chathamica is an evergreen shrub, its branches being furnished with somewhat glaucous, pea-green, pointed leaves. The flowers, which are yielded profusely in cone-shaped racemes about mid-summer, are a bluish-purple, fading to almost white as they go off. While both foliage and blossoms have their charm, the most notable feature of V. chathamica is its procumbent growth and the very graceful way in which the elegant branches weave their close network over bank or boulder. The plant does not seem to mind whether it is on the flat, draping a slope or mounding over rocks. Propagation is very easily effected by means of cuttings. Though I have heard of a variety called minor, V. chathamica appears to be curiously constant in habit and colouring. *A. T. J.*

HARDY FLOWER BORDER.

ANEMONE SEEMANNII.

There is about the vast majority of the plants in the genus Anemone a grace and beauty which readily assure them of the favour of the lover of flowers. The plants vary greatly in stature and other repects, but among all the members of the race those that may be termed the nemorosa Anemones deserve and receive special admiration from many.

Our native Wood Anemone, A. nemorosa, with the other native one, A. ranunculoides, have been wedded, and the union has produced a very attractive flower which has been named A. Seemannii, although it sometimes appears in lists as A. intermedia, a title now bestowed upon another hybrid. But A. Seemannii would not have been inappropriately named intermedia, as in appearance it is a plant which partakes of the character of both parents. It has larger foliage than that of A. ranunculoides and larger flowers than those of that Anemone, but the flowers are of a pretty shade of yellow, lighter than those of A. ranunculoides. In fact, but for the colour, the prepotency of A. nemorosa would be very evident.

A. Seemannii has occurred from time to time in gardens where the two species were grown together, and it may be utilised in the garden for the same purposes as A. nemorosa. A little group is delightful during the month of May. A soil composed of loam, leaf-mould and peat will suit it admirably, and it may be cultivated in sun or, preferably, afforded some shade. It is by no means plentiful in the trade.

GENTIANA ANDREWSII.

Andrews' Gentian is known frequently as the "Closed Gentian," and in its native country is called the "Dumb Foxglove." Both these popular names indicate the disappointing nature of the plant. The flowers never open properly, and many who have purchased the plant without knowing this habit have been greatly disappointed when the blooms appeared and passed away without expanding. It is a plant for the mixed border where this feature is not so apparent, and where its flowers of dull blue with a white tip do not seem so disappointing as when in a position where this Gentian is more conspicuous. Gentiana Andrewsii grows from nine inches to a foot in height, and thrives in ordinary loam, in a sunny or half-shaded position. As may be expected, it is not common in cultivation, but is occasionally offered by hardy plant dealers. It may be raised from seeds or increased by division.

CLEMATIS INTEGRIFOLIA.

In a comparatively recent catalogue the non climbing Clematis integrifolia was described as "very showy." I disagree with this opinion without seeking to belittle such a good old garden plant. It cannot, by any stretch of the imagination, be classed as one of the "showy" flowers. It is an erect, non-climbing Clematis which has been for long years in cultivation as a border plant, but has not held its own well against the influx of modern plants, and is but seldom observed in gardens, although offered in the catalogues of responsible nurserymen.

The flowers are not bright enough to be called showy, nor have they the redeeming virtue in the eyes of some—size; they are comparatively small, rather bell-shaped, drooping, of dark blue with a white centre. There is also a rare double variety sometimes listed for sale. Its height is generally about three feet, but it may be less or more, according to the nature of the soil and the amount of moisture.

Propagation of the single variety is effected by seeds or division, and of the double by division only. I think it well to mention that the rootstock is exceedingly hard and that the plants should not be divided unless of good size. It is likely that propagation by cuttings may be performed, but I have never had occasion to try this. A good fertile loam, well enriched with manure, is the best soil for C. integrifolia.

Although a non-climber, C. integrifolia requires to be staked and tied or it will fall prostrate or nearly so. *S. Arnott.*

CICHORIUM INTYBUS.

The Chicory is a native of this country, and that is probably the reason why it is so generally despised for garden decoration. This is surprising when one considers that plants with really good blue flowers are eagerly sought after. The Chicory is frequently found growing wild on rubbish heaps, in old quarries, and in stony waste places; as it grows from five to seven feet in height, it makes a handsome group in the mixed border. It is also a beautiful plant for naturalising in the wilder parts of the garden. When used for the herbaceous border it is best treated as a biennial, although plants will remain good for two years. Seeds may be sown in the open during July, but plants will flower during the first year if seeds are sown indoors during January, and the young plants placed in their flowering quarters sometime during the spring. *J. Coutts, Kew.*

BULB GARDEN.

ALLIUM TRIQUETRUM.

This is a useful Allium for naturalising in woodland, wild gardens and stream-sides. Indeed, it has already joined our native flora in some counties. This means, however, that it is a plant to be treated with discretion where there are choicer things growing, for a species which is a good coloniser is generally a pest in the choicer company of the border. Some years ago, in a rash moment, I planted a few bulbs of A. triquetrum in a mixed border. It was not long before they were transferred to the wild, but I have not yet seen the end of the seedlings which this redundant Onion left behind it.

Still, in a cool woodland spot where such abounding herbs as the wild Hyacinth (Scilla nutans) can be given a free hand, A. triquetrum can be very delightful. Its tall, three-sided stems and white, campanulate flowers, with each segment lined with green, are elegant and attractive, and the grassy leafage, broad and glossy, associates well with our native herbage. The whole plant has an Onion-like smell, but like the skunk, it apparently only uses this for purposes of defence, for it is not noticeable until its owner is disturbed or annoyed.

SCILLA PERUVIANA.

This fine old plant seems to be "coming-in" again after a considerable period of comparative neglect, and it is well worth the attention of anyone who has a mixed border, open woodland, or space to spare between shrubs. In spite of its name, S. peruviana appears to be a native of Spain, and as it was introduced in the year 1607 it is a long time since it was a novelty. But, like good wine, it has lost nothing in keeping and S. peruviana is as hearty to-day as ever it was. In any light soil it is quite hardy enough for most places, and a plant that asks a minimum of attention.

The large bulbs throw up broad, Yucca-like leaves of a rich, glossy green, about eight inches in height, these remaining all the winter. In early summer the flowers appear in bold, pyramidal umbels some six inches or more across, the star-shaped blooms being a violet-purple. But there are varieties in several shades of colour, some approaching blue, and there is a white. S. peruviana can endure 15° to 20° of frost in a free soil. It is generally advisable to lift and divide the bulbs about every third year, this being done in July or August. *N. Wales.*

TREES AND SHRUBS.

ARAUCARIA BIDWILLII.

In *The Gardeners' Chronicle* of September 24 appeared a note on the above-named Araucaria. The photograph (Fig. 226) will convey an idea of the beauty of this species, as represented by a specimen growing in the grounds of Henapyn, Torquay. It was a very pleasant surprise to me to find Araucaria Bidwillii growing so well out of doors, as, previously, I had only seen it growing under glass. The largest specimen I know is the magnificent one in the Temperate House at Kew, and so far as I am aware the plant figured is the only one growing out-of-doors in this country.

Araucaria Bidwillii is known as the Bunya-Bunya Pine of Eastern Australia, and was named after Mr. J. T. Bidwill, one of the early botanical explorers of Australia and New Zealand, and a correspondent of the late Mr. James Veitch, of Exeter. It is said to attain its finest development between Brisbane and the Burnett rivers, where it is often found growing to a height of 150 feet. The leaves are ovate-lanceolate and sharply pointed, convex above and concave beneath, and of a deep, glossy, green colour.

I shall watch the Henapyn tree with interest for signs of a cone. I think it only fair to add that this particular example was sheltered in its early stages from south-west gales by a large Cedar, which has since been removed. It is growing about 150 yards from the sea. *F. G. Cousins, Torquay.*

THE PROSTRATE ROSEMARY.

Few will be other than ready to accord to this delightful plant the foremost place among the varieties of Rosmarinus officinalis, and most of us will gladly give it a prominent position in a list of the choicest rock garden shrubs. If it is not quite so hardy as the type, its prostrate habit, and the fact that it will be quite happy draping a vertical wall suggest possibilities in the way of protection from severe frost, which would be impracticable with tall shrubs.

This little Rosemary closely resembles the type in all but manner of growth. The leafage is rather smaller, denser and a brighter green, but the bright blue flowers are the same and these are produced in abundance throughout the spring and often well into the summer. As I have implied, this charming Rosemary is quite procumbent in habit, closely covering a bank or boulder or the face of a wall with the best of goodwill. It delights in sun, of course, and the soil and aspect can scarcely be too hot for it. The best display of this Rosemary that I have seen was at La Mortola (Fig. 225, p. 481) where a retaining wall to one side of the tennis court is entirely covered by its mantle of fresh green foliage and azure flowers.

Although the prostrate Rosemary is said to have been introduced from Capri, where it grows in company with Lithospermum rosmarinifolium, I feel sure that equally prostrate forms might be collected in various parts of Italy. At any rate, near Bordighera, I have seen any number of Rosemary bushes on the hills, all of which were not only dwarf in stature, but which persisted in the prostrate habit, the branches arching over and bringing their tips to the soil when about six inches high. *A. T. Johnson.*

LESPEDEZA BICOLOR.

Included in several of the exhibits of hardy shrubs at the last Holland Park show were specimens of Desmodium penduliflorum, a species now referred to Lespedeza bicolor.

This and L. Sieboldii appear to be the only species in common cultivation in this country. It is a native of northern China and Japan, and may be considered hardy in all but the most exposed gardens. It will thrive either in a mixture of sandy soil and peat, or a deep, fibrous loam so long as the site is well-drained, and when well-established in a suitable position it will grow to a height of six or seven feet.

The small, Pea-like, bi-coloured, rosy-purple flowers are produced abundantly along the graceful, drooping branches during August and September; and in conjunction with the glabrous, pinnately-trifoliate leaves, create a most pleasing effect in the shrub border. *R. K.*

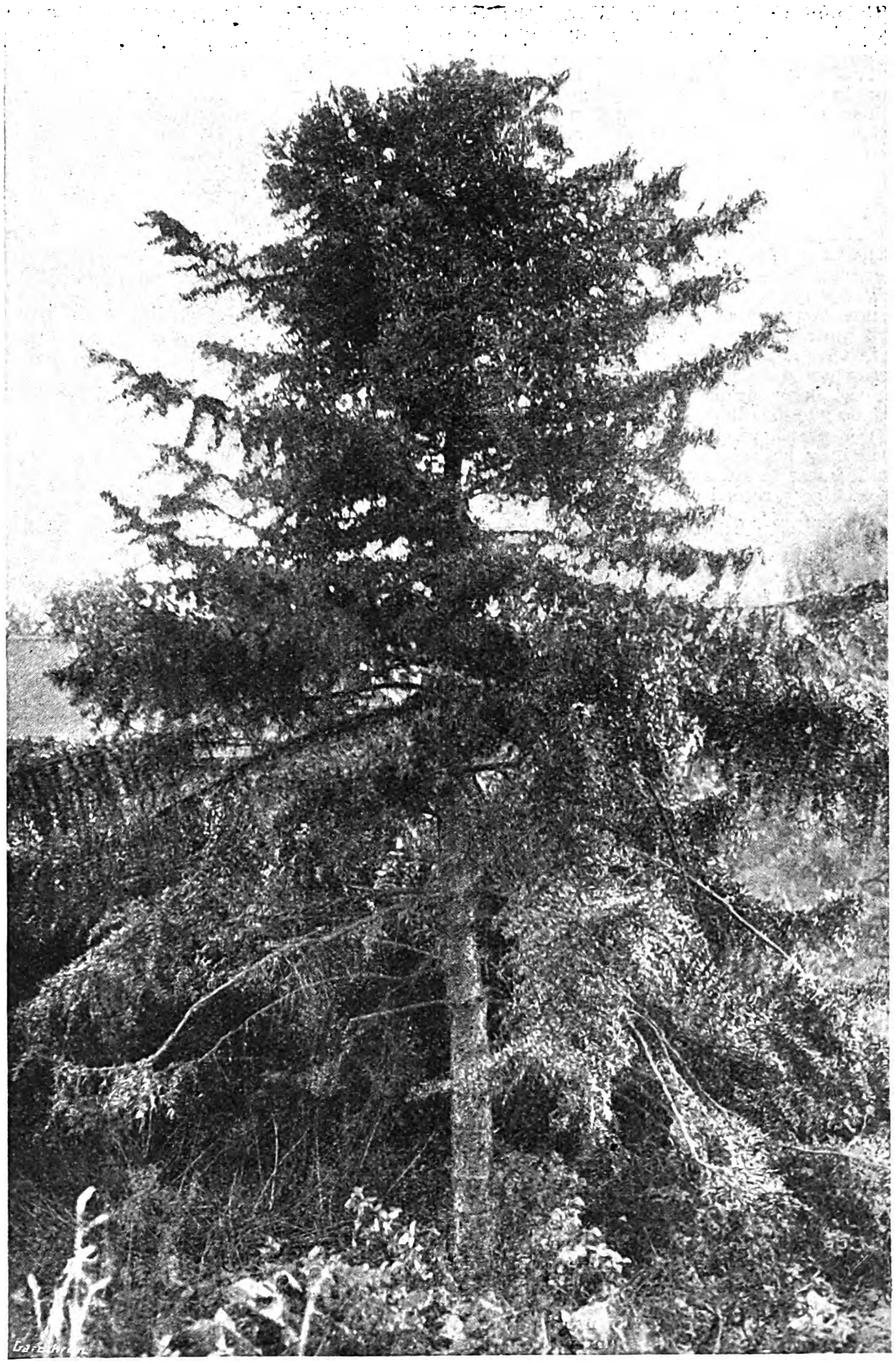

FIG. 226.—ARAUCARIA BIDWILLII, AT HENAPYN, TORQUAY.

POPULUS LASIOCARPA AND P. SZECHUANICA.

These two Poplars were among Wilson's earlier introductions from China, but there appears to have been very little mention of them in the gardening press, so I presume they are not often seen in gardens.

Although the two are unmistakably different, I am afraid they are confused in some quarters. Of the two, perhaps P. lasiocarpa is the better known, and although good specimens may be found here and there, I have only young trees under observation, and these are decidedly interesting and distinct.

P. lasiocarpa is found in central China; young trees have an open, branched habit; the main stem is greyish, with scaly bark; the branches are stout, slightly angular, hairy and dull green in colour; the leaves are firm and average three inches to six inches long and two inches to four inches broad, deeply cordate, with acute apex, extra downy, clear green above, dull green and rather rough underneath, and are margined with gland-tipped serrations. The petiole is four inches to six inches long, round, with swollen base, distinctly red in colour, as are the midrib and chief veins. The buds are large and long-pointed, viscid and curve outwards from the branch. I have not seen flowers on living plants. Young trees that were planted in sandy loam have made eighteen inches or more growth in a year, and yet under similar conditions some have failed as though cankered. The loose habit suggests that pruning, which should be done early, as the tree seems to resent severe cuts. If neglected, the branches soon get unwieldy, sway badly in windy weather, and the tree is difficult to keep in position.

P. szechuanica is found in Western China, and is of similar habit to the former, but perhaps a little more stiff. The young growths are bright green, polished and angular, noticeably marked with lenticels; there is a little pubescence on young growths and foliage. The foliage is heavy and the handsome leaves average three inches to six inches long, two inches to three inches broad. On healthy, young trees in the nursery I have measured leaves between ten inches and twelve inches long, and exceptionally fine. They are somewhat oblong-cordate, with acuminate apex, stipulate, coriaceous in texture, dark green and smooth above, white and shining underneath; margins serrate; petioles two to three inches long, round and deep red. The chief veins are also red and this colouring is an attractive feature in these two Poplars. The buds are large, sticky, long-pointed and slightly curved. A tree planted about 1916 is twenty feet or more in height. The foliage is sufficiently distinct to distinguish P. szechuanica from P. lasiocarpa.

As with many more Poplars, there is no autumn beauty in the foliage; the leaves merely curl, turn brown and fall. I am uncertain as to the propagation of P. lasiocarpa, but it appears to be not easily increased from cuttings, but certain nurserymen are evidently successful with it. On the other hand, there is no hindrance to the propagation of P. szechuanica, and a stock may be raised quickly, as I have seen cuttings inserted in sand, under a propagating case, indoors, rooted and potted off during the month of August. Cuttings made from leafless shoots inserted out-of-doors in autumn, may be relied upon. *C. F. Coates.*

CELASTRUS ARTICULATUS.

It is somewhat surprising that this highly decorative climbing shrub is not more popular in our gardens, as at this season of the year there is no plant of climbing habit to compare with it. It is a vigorous grower, and when mature often has vines up to forty feet in length, the branches and main growths twining round each other and round anything that will give them support.

Celastrus articulatus may be used for a variety of purposes. It is effective if trained round upright poles or over walls and fences, but is perhaps most attractive if allowed to ramble over hedges or old standard trees. One of the best specimens I have seen was clambering over a large bank of Rhododendrons, the brightly-coloured fruits of the Celastrus showing to great advantage against the dark green foliage of the Rhododendrons.

C. articulatus is a deciduous shrub of no particular interest in respect to foliage or flower, but very ornamental when fruiting. The leaves are from two to five inches in length and obovate in shape, pointed at the apex, and narrowing to a short stalk at the base, while the small, green flowers are produced in numerous, small, axillary clusters. These are followed by round fruits which are about a quarter-of-an-inch in diameter, green at first, but turning to yellow as they ripen, and finally bursting to disclose the golden, inner surfaces of the capsules and the glossy, orange-scarlet fruits, which remain attractive from the end of October until (very often) the end of January, as birds do not seem to relish them.

This Celastrus is a native of north-east Asia, and was introduced to this country about 1870. It is of easy culture and is readily propagated either from seeds or from cuttings of half-ripened shoots taken during late summer, so that there is no good reason for its comparative scarceness in gardens.

PYRACANTHA GIBBSII.

Although several years have elapsed since the introduction of this Pyracantha from China by Mr. E. H. Wilson, it is still comparatively rare, and seldom seen other than in large gardens where choice shrubs are a special feature. There can be no question as to the beauty of this shrub, or its usefulness; it is one of the finest evergreen, fruiting shrubs in cultivation, possessing the additional charm of being very attractive when in bloom.

P. Gibbsii was introduced as a form of the Himalayan P. crenulata, under which name it received an Award of Merit in January, 1925. It was then sent to Kew for identification, where it was determined as a distinct species and given its present name in honour of the Hon. Vicary Gibbs, whose keen interest in shrubs is well-known. P. Gibbsii is a strong, free-growing evergreen shrub, ten feet or more in height, with dark, glossy, green, crenated leaves considerably larger than those of P. crenulata. It is very regularly and exceptionally free-flowering, the flowers being creamy-white and borne in dense clusters on all but the oldest growths. These flowers are followed without fail by masses of round, flattened fruits, which are about a quarter-of-an-inch in diameter and of a glossy, rich scarlet colour. They are usually fully coloured by the end of November, and if untouched by birds remain attractive well into the following year.

P. Gibbsii grows quickly from cuttings of ripened shoots inserted in late autumn in an open border under a north wall or, better still, in a cold frame; the seeds germinate freely and often give rise to quite distinct forms.

Besides being a handsome subject for the shrub border, this Pyracantha makes an attractive covering for a wall with a cold aspect, responding well to training and never failing to flower and fruit freely. *A. G. F.*

ROSE GARDEN.

THE BANKSIAN ROSE.

Rosa Banksiae was introduced from China in 1807 and named in compliment to Lady Banks. It was at first grown under glass, but records state that in 1813 two Banksian Roses were planted in the open ground at Spring Grove, and five years later they had covered forty feet of wall.

The Banksian Roses thrive in a warm, well-drained soil, with the protection of a south wall. Flowers of the yellow Banksian Rose are small, but very freely produced in clusters. It commences to bloom in May. The foliage is shining, smooth and evergreen. The double white Banksian Rose has very fragrant flowers, produced in clusters. Another form, sometimes grown under the name of Rosa Fortuneana, has large, solitary, white flowers. A single, yellow-flowered Banksian Rose is very bright and attractive.

These Roses require judicious pruning. Badly ripened shoots should be removed, and also laterals which have produced flowers. Retain the medium-sized well-ripened shoots, as these will produce the earliest blooms. *C. Ruse.*

FLOWER GARDEN.

CATHCARTIA VILLOSA.

This interesting plant is one of the oldest of those tribes of Poppyworts and Meconopsis which have come to us from the region of the Himalayas, as it was introduced in 1850. Closely allied to Meconopsis, C. villosa is a perennial though not generally a long-lived one. It makes a tuft of heart-shaped leaves which are lobed and interlobed, bright pale green and covered with a pelt of golden fur. At this early stage, C. villosa might be mistaken for Meconopsis Wallichianum, but the branching stems, rising nearly to two feet, bear a shower of pretty, golden-yellow flowers, like small, yellow Poppies. A cool, vegetable soil, uniformly moist and well-drained, with part shade, is what C. villosa appears to enjoy. But even under the most promising conditions the plant will often die away, apparently from the effect of winter wet. However, it seeds freely, and this affords a ready means of increase. *J., Wales.*

INDOOR PLANTS.

LACHENALIAS.

The beautiful colours and free-flowering habit of Lachenalias have brought them into prominence during recent years, and undoubtedly they are valuable spring-flowering plants. The texture and mottled appearance of the leaves are attractive, and no other flowers possess quite the same shade and waxy appearance. Another item in favour of Lachenalias from the grower's point of view, is that the bulbs increase with remarkable freedom under good cultivation so that frequent replenishment is not necessary.

The plants will not withstand hard forcing but for decoration in the early spring months they are invaluable. Their cultivation is extremely simple and consists in potting the bulbs in August or September in a good compost and placing them in a cold frame until growth begins. They should then be transferred to a greenhouse with a temperature of from 45° to 55°, where they will grow satisfactorily and flower from February onwards. After flowering, the plants should be kept growing until the foliage shows signs of ripening, when water should be withheld gradually, and the pots fully exposed to the sun, so that the bulbs may ripen off.

There are many excellent varieties varying in depth of colour and markings of the flower. Leiden is a very showy variety with large golden-orange bells, borne on reddish stems, and it is very vigorous. Monte Carlo has rich, golden-yellow bells, shaded with coral-red at the edge, while Nelsonii is a remarkably beautiful and free-flowering variety, with reddish stems that bear golden-yellow bells, slightly marked with green. *A. P. C.*

COLUMNEA SCANDENS.

In Columnea scandens we have a subject of great charm in the warm house during the latter part of summer and early autumn. It is a Gesnerad, hailing from the West Indies, hence its need of heat. The tubular, scarlet blooms are an inch or so long, and when seen depending from a plant growing in a large basket, make an attractive display. I recently saw such an example at Luton Hoo, when spending a pleasant hour with Mr. Metcalfe, who speaks highly of this old stove plant.

Another way of displaying this plant to advantage is to secure the growths to pillars, up and around which they can be trained so as to give equally good results as are obtained by the hanging-basket method.

Propagation of this stove evergreen is not difficult, cuttings rooting well in sandy soil in a warm frame. Later treatment demands thorough drainage and a rooting medium of peat, loam, sand and charcoal.

There are several other members of this family, some shrubby, others climbing or trailing, and all are more or less beautiful, with orange, scarlet, purple or striped flowers, but Columnea scandens is one of the oldest and perhaps one of the best known. *C. T., Ampthill.*

COLEUS THYRSOIDEUS.

It was good to see a reference to this excellent winter-flowering plant by Mr. Harrison in his recently weekly notes. Coleus thyrsoideus seems to have been overlooked or neglected by many gardeners since the war days. Yet what a fine plant it is! The rich blue flowers are, in the writer's opinion, not to be beaten in their colour by any other indoor flowering plant. They endure well, too, both in a cut state and on the plant.

Plants are not easy to maintain in perfect condition owing to their habit of yellowing and dropping the bottom leaves prematurely, thus leaving the bare stems to view. To hide this defect I place the plants between Ferns and other foliage subjects. On one occasion, when looking round a garden, the gardener in charge had put a few Coleus thyrsoideus among the pink Begonia Gloire de Lorraine, and the effect produced was, as may be imagined, quite captivating.

Coleus thyrsoideus is a native of Central Africa and belongs to the Labiatae Order. The time of flowering is, usually, Christmas to March. Plants are raised from seeds or from cuttings and after pinching out the growths at an early stage, attain a height of three feet or more. *C. T., Ampthill Park.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM KLOTZSCHIANUM.

Although Cypripedium Klotzschianum (Fig. 227) has never been a common or popular Orchid under cultivation, it is, nevertheless, an attractive member of the Selenipedium group, with a close affinity to C. caricinum and C. Lindleyanum, and requires similar cultural treatment to these species.

C. Klotzschianum was discovered in British Guiana during the second Schomburgk expedition to that country, and at a later date (1885) it was found on Mt. Roraima by Mr. Im Thurn, and plants were imported by Messrs. Sanders. The wide-mouthed lip is pale yellowish-green, with distinct veins and brown spots just within the rim. The narrow, elongated petals are greenish, with a shading of rose or pink, while the long, slightly-twisted dorsal sepal is also green, with rose tinting and dark, purplish lines. The dark flower stems, the ovary, and the undersurface of the sepals are all hairy.

C. Klotzschianum flowers during the summer and is an interesting plant, but, unfortunately, it belongs to a section that is not at present popular among growers of Cypripediums.

YELLOW-FLOWERED CATTLEYAS, LAELIO-CATTLEYAS AND BRASSO-CATTLEYAS.

The handsome coloured plate of Laelio-Cattleya Oriflamme, issued with *The Gardeners' Chronicle* of October 8, indicates the advance made by hybridists in the introduction of yellow colour to this most gorgeous family of plants.

Nature has not been lavish in her gifts as regards this colour. Cattleya Dowiana and its variety aurea, afford the best examples of yellow colouring in the Cattleya family, whilst the few yellow Laelias are either small or deficient in colour, and in the genus Brassavola there is not a single example.

The earlier hybrids between Cattleyas and Laelias did not show much evidence of the possible development of a race of golden-yellow Laelio-Cattleyas, but by continuous efforts a brilliant series has been evolved, and many of the most highly-coloured examples are interesting secondary hybrids.

C. Dowiana aurea, the predominant partner in the evolution of this group, was never a robust grower, and always very difficult to keep in a healthy condition over a series of years, even under the care of the most experienced growers.

Although the yellow-flowered hybrids are not as robust as many of the dark-flowered forms which have C. Dowiana as a parent, there are many of free growth and easy culture which produce their flowers in profusion at different seasons, so that their beauty may be enjoyed nearly all the year round.

Among the better-known Cattleyas with yellow flowers, or yellow suffused with bronze, there are C. Aeneas, C. Triumphans, C. Iris, C. Venus, C. Mrs. Medo, C. Jasper, C. Helidor, C. Rhoda and C. iridescens, and continual improvement is taking place.

There are many very handsome Laelio-Cattleyas to select from, and the beautiful Laelia tenebrosa, Walton Grange var., used as a parent, has been the means of increasing the size of the flowers in the later hybrids of this family. These include L.-C. Luminosa aurea, L.-C. Thyone, L.-C. Witleyense, L.-C. Carmencita aurea, L.-C. Coronet, L.-C. Ophir L.-C. Mercia, L.-C. Elinor, L.-C. Ernestii, L.-C. Helius, L.-C. Nelius, L.-C. Myra and L.-C. G. S. Ball. Laelio-Cattleyas are always deficient in shape as compared with Cattleyas, owing to the narrowness of the petals of the Laelia parent.

It is among the Brasso-Cattleyas and Brasso-Laelio-Cattleyas that the greatest improvement has been made, the yellow colour being imparted entirely by a Cattleya or Laelia parent. Brasso-Laelia Mrs. M. Gratrix, when introduced in 1899, was considered a great achievement, but compared with some of the later hybrids, it is comparatively insignificant; but this applies to all sections of Orchid hybrids. The better known hybrids of this group are Brasso-Cattleya Mrs. J. Leemann, B.-C. Ida, B.-C. Miranda and B.-C. Safrano; Brasso-Laelio-Cattleya Everest, B.-L.-C. Golden Casket, B.-L.-C. Winnifred and B.-L.-C. The Baroness. The last-named has been the parent of many of the lovely hybrids shown recently at the R.H.S. meetings.

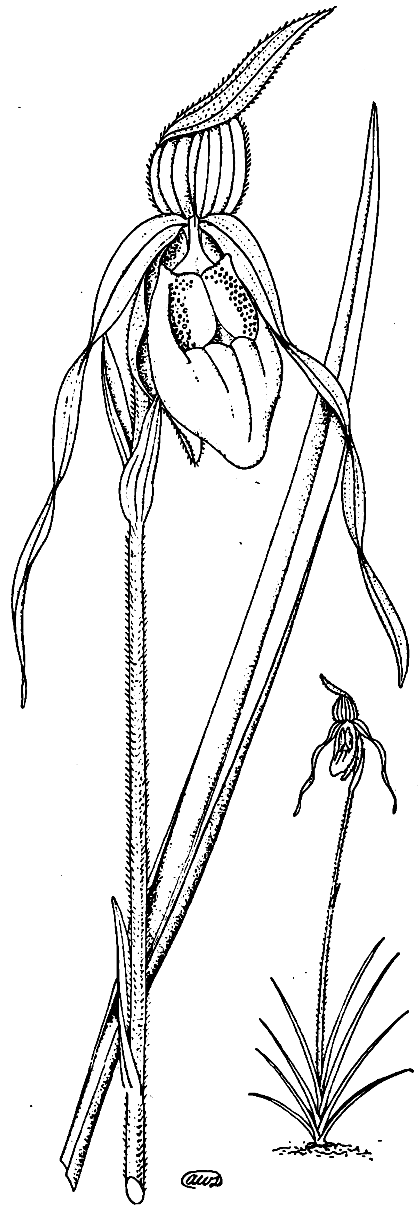

FIG. 227.—CYPRIPEDIUM KLOTZSCHIANUM.

As improvement in these yellow-flowered Orchids has been so great during the past decade, we may hope that it will be still greater in the future.

PERISTERIA ELATA.

This old plant, well-known as the Dove Orchid is always of considerable interest when in bloom, on account of the resemblance of the flower to a bird. It succeeds best in a stove temperature when growing, but when the large pseudo-bulbs are fully made up, the drier, cooler atmosphere of the Cattleya house suits it best.

This species requires a long, dry rest, without which, however strong the growth may be, flowering is problematical. The application of water to the roots needs care, especially during the winter months, and it is better to keep plants on the dry side rather than afford too much water, as an excess often causes the pseudo-bulbs to decay. *J. T. B.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Eight degrees of frost in the first week of November marred the autumnal livery of our woods, killing off the foliage of most trees before the leaves had time to brighten. Practically the only deciduous tree still well-clad in its yellow mantle is the Rum Cherry—Prunus serotina—which I have a personal reason for esteeming, reminding me, as it does, of my old friend, the late Mr. H. J. Elwes, who gave me seedlings many years ago; but it deserves more attention than it has hitherto received in this country as a forest tree, its timber being in much request in its native North America for cabinet-making. It owes its popular name of Rum Cherry to the use made of its berries for flavouring spirituous liquor; but none of our trees here —now from twenty-five to thirty feet high— have borne any fruits as yet.

It is a pity that Mr. Findlay had not a better specimen than the one shown in Fig. 198, page 439, to illustrate his note on Pinus radiata. This noble Pine, which continues to be more generally known under Douglas's name of P. insignis, forms a splendid bole when grown under forest conditions; nor can I agree with Mr. Findlay that it is "of little use as a forest tree." It is true that the timber is light and soft, but it is produced more rapidly than that of any other Pine, and I understand it is in much demand in New Zealand and South Africa for packing cases. The enormous consumption of timber for pulping and paper-making is supplied at present from forests in a climate too severe for P. radiata, but there can be little doubt of its value for those purposes if it were grown as a crop in mild, maritime districts. The superb verdure of this Pine renders it specially suitable for ornamental planting; but isolated specimens require timely use of the knife to prevent a sprawling habit.

The note upon Saxifraga Cotyledon islandica (page 443) reminds me of my first acquaintance with the fine variety that goes under that name, but it certainly is not entitled to it. It must be twenty years or so since I was being taken by the late Mr. Bidder round the garden of St. John's College, Oxford, which he did so much to enrich and beautify. He showed me this Saxifrage, which, he said, had been collected in Iceland by a friend, and he gave me a piece of it, whereof the offspring has increased and thriven here ever since. But the flora of Iceland contains no variety of Saxifraga Cotyledon, and Mr. Bidder told me later that the friend who collected the plant in question had changed his mind about his destination, and had spent his holiday in Norway instead of Iceland!

About this time last year, I expressed regret, I think, in *The Gardeners' Chronicle*, that I had never succeeded in getting Sternbergias to flower here. My complaint brought a letter from a kind lady in Kent, together with some bulbs of Sternbergia (I am not sure of the species) which she told me never failed to flower in her garden or to increase freely. These were planted at the foot of a brick wall facing south; they have sent up plenty of shining, green leaves, but no flowers. I should be glad to hear whether this bright autumnal Amaryllid ever flowers in northern gardens. *Herbert Maxwell, Monreith.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XXI.—THE ALPINE HARVEST.

SEPTEMBER 26: minimum 49°, maximum 58.5°; continuous drizzle. To-day work began at full pressure again, and the first thing to do was to throw a bridge across the torrent. This was more difficult than it looked, for there was a lot of water coming down, and timber was not plentiful. However, after an hour's work, we managed to jamb a large log athwart the current at a suitable point, and crossed in some trepidation—for a slip would have spelt disaster. I now went up the narrow rock gulley towards the cliff where, in June, Rhododendron megeratum and R. Edgworthii had hung in magnificent bunches. Primula eucyclia was seeding very badly, but I secured a few capsules. Close by, I noticed a truss of capsules on the big-leafed 'Barbatum' Rhododendron, the first seen, and on a rock there grew a clump of the sea-blue Gentiana Veitchiorum, one of the 'Ornata' section, and a fine thing. In fact, there were more flowers than ripe seeds at present, and during the next few days I collected several Swertias, two species of Cyananthus, Crawfurdia, an Orchid, Saxifrages, Pedicularis, Mimulus, Polygonum, many Compositae and Umbelliferae.

So rankly did the meadow grow now that it was almost impossible to ascend the lower portions of the gullies. In June, not only had the meadow plants not appeared above ground, but there was a great slanting, semicone of snow to tramp up—it showed the way, offered good foot-hold, and kept one from getting entangled in the growth on either side. Now the snow had all gone, the meadow had grown up over the earth cone to such a height that it was impossible to keep one's direction, and deep water-courses overgrown with vegetation and quite invisible until you fell into them, afforded the only possible route. At higher altitudes the meadow disappeared and the gullies became exposed; but here they were steep and treacherous, for water was flowing down them, the rocks had not yet settled after the scouring of the rainy season, and the smallest stone dislodged might start a crashing slide; but one had to ascend by the gullies, the face being far too steep.

September 27: minimum 45.5°, maximum 65°; weather improving. I went for a long climb, but again obtained more flowers than seeds, though the crumbling capsules of the 'Tea Rose' Primula (P. Agleniana) were ripe. There were some fine bunches of golden Saxifrage on the cliffs, and most of the Rhododendrons were seeding well, though I did not intend to start collecting them until the second week in October; still, it would not do to put it off till too late, as the snow might come at any time, though actually it did not come in serious bulk till November.

I found the high meadow composed of a large assortment of flowers, including Geranium (2 spp.), Impatiens (3 spp.), Polygonum (3 spp.), various Compositae (Senecio, etc.), Astilbe, Valeriana, Saxifraga, Dipsacus, Epilobium, a few Labiatae and Umbelliferae, Ferns, Lilies, Nomocharis pardanthina, Primulas (P. sikkimensis, etc.), twining Aconite, Cuscuta, etc.

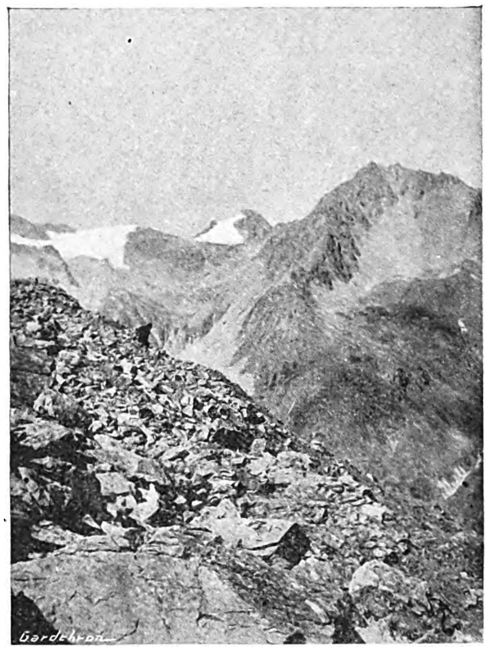

FIG. 228.—CLIFFS AND SCREES, WITH SNOW BEDS; 15,000-16,000 FT. ALT.

There are comparatively few grasses in this high autumn meadow, and many of the plants, *e.g.*, Saxifrage and Impatiens, ascend to considerable altitudes, where they become much dwarfed.

One of two more loads arrived in camp, and we had sufficient food to carry on, living chiefly on Rice; but I was still very uncomfortable, without any camp furniture.

September 28: minimum 45°, maximum 71°; a fine, sunny day. The wind changed direction in the night and I awoke in the small hours to find the sky blazing with stars. After an early breakfast, I went up the cliff to look for Magnolia globosa and Viburnum Wardii. The former was more abundant than I thought, growing in the dense tangled thickets of Rhododendron aureum and other species, Enkianthus, Acer, Pyrus, Viburnum, etc., on the precipitous rock face. The largest bushes are twelve to fifteen feet high, and nearly as much through, sometimes two or three together, but usually scattered. I never saw more than six fruits on any one bush, and two or three were a more common sight. The fruits turn bright rosy-red, like an Apple, as they ripen, and open to expose the brilliant seeds; they average three or four inches in length. What the flowers are like I do not know, but the foliage, glistening with tawny golden hairs, is rather striking. Nevertheless, the plant is evergreen, and even if the flowers are very showy, they cannot be conspicuous, unless many more are produced under cultivation. The discovery of this species here was interesting; it was first recorded from Sikkim, and subsequently found as far east as the Salween-Taron divide, within what we have called the Indo-Himalayan region. I expect that it will presently turn up still further west, in the Assam Himalaya. M. globosa was by no means a common plant here, and I took particular note of its situation because I saw it nowhere but on this one very steep, bush-clad rock face, which might have been tree-clad, had there been sufficient soil.

Viburnum Wardii, which has beautiful foliage, both in summer, when the rugose leaves are dark green, and in autumn, when they mellow to volcanic reds and yellows, was common enough, but the great panicles of chalk-white flowers produce few fruits, which blacken suddenly, and disappear. They do not come adrift easily, so no doubt birds are responsible. At the lower altitudes where the tree grows it does not seem to flower at all, and I found scores of trees which never had flowered, and wasted much time searching them for non-existent fruits. Eventually I met with trees higher up which still bore a fair number of berries, though it was necessary to climb for them.

September 29: minimum 50°, maximum 61°: The fine weather was short lived, the rain beginning again in the night. Yesterday the yak came down from the alps, on their way back to the village, and the men wanted my hut. Needless to say, possession *was* the law, especially as they had not yet done anything about my kit; I had no oil for my lamps, no flour, no bed, or chair, or table, and only Rice and porridge to eat.

I went into the forest to collect seeds of Magnolia mollicomata, and picked up a few fallen cones. I also discovered several trees of Ilex nothofagacifolia, but not one had any berries; all seemed to be dying off at the top, and moss-shrouded and draped them in anticipation of their death and burial. People have in the past been guilty of exterminating plants—though not, perhaps, from the Burmese jungle! Here, on the contrary, is an example of the exact opposite, for this Ilex is, I feel sure, in a fair way to disappear in the fierce competition of the temperate rain forest, to be reincarnated in Britain from seeds I collected.

This upper temperate rain forest consists largely of Rhododendron sino-grande, Magnolia mollicomata, a 'Thomsoni' Rhododendron, Acanthopanax, the Ilex above-mentioned, and enormous Oak trees; the first Conifers met with are Tsuga and Juniper, and these mark the transition to Conifer forest above. In the undergrowth one meets with the same small trees and shrubs which elsewhere form the tanglewood, Pyrus, Hydrangea, Viburnum, Ribes, Rubus, 'Neriiflorum' Rhododendron, etc. There is a considerable epiphytic flora, the woody plants being mostly species of Rhododendron ('Maddeni,' 'Vaccinioides,' R. Edgworthii, R. megeratum, etc.), and Pernettya. Where the ground is rocky, it is covered with Ferns and creeping species of Rubus; elsewhere, with a thick, sodden mould of dead leaves, fruits, sticks and so forth. Climbing plants include a big Aristolochia and Clematis.

On the whole, this part of the forest is botanically interesting rather than horticulturally promising, though there is always the chance of a good new Rhododendron, or Magnolia, and the big-leafed Pyrus, Viburnum Wardii, and the best Ilex all came from this department.

September 30: minimum 49°, maximum 64.5°; showery, but more promising. I went for another long climb, ascending to about 13,000 feet, where I found an interesting prostrate Lonicera curtaining the rocks, and collected some of the juicy, black berries. Seeds of Primula prenantha and P. Agleniana also went into the bag, and about three capsules of the very rare P. calthifolia, a yellow-flowered species over which hangs the fog of mystery. When I first found it, in June, there was only a single specimen in flower, and so rare was it—about half-a-dozen plants—that I had no intention of taking any more. From its foliage, habit and capsule, I did not hesitate to call it a 'Nivalis';

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, October 1, 15, November 5, 19, and December 3, 1927.

from its flower, Professor Wright Smith has decided that it is a 'Petiolaris,' the foliage being no bar to that decision. And a 'Petiolaris' it must remain for the present, as I have no fruits with which to upset the Professor's conclusion. Cyananthus lobatus was in flower on the alpine turf, and a big cottony Thistle on the rocks below. I saw a Monal pheasant, and collected a number of flowers, including Pedicularis, Corydalis, Allium, Gentiana, Swertia and Saxifraga.

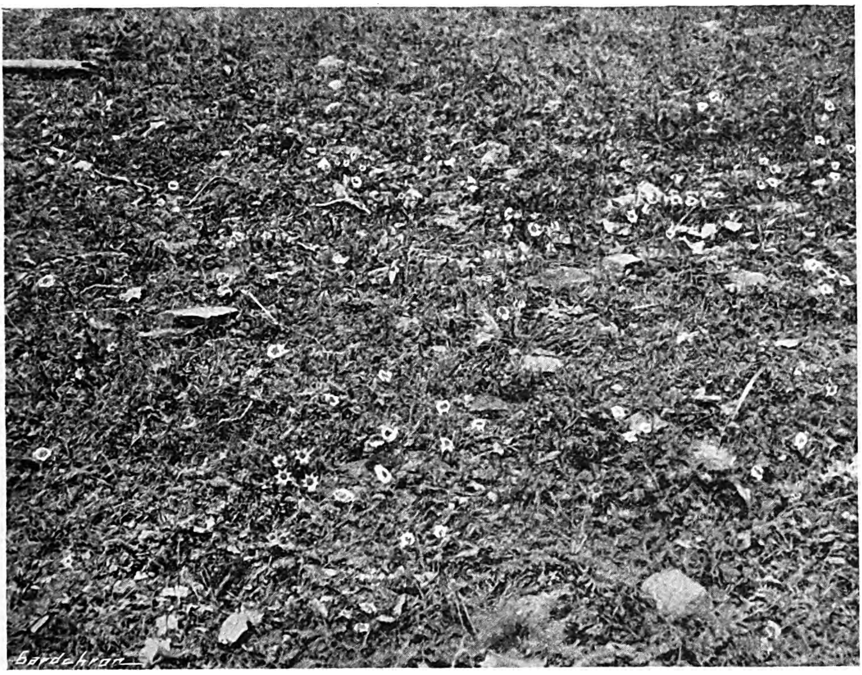
FIG. 229.—GENTIANA VEITCHIORUM IN ALPINE TURF, 10,000 FT. ALT.
(see p. 486.)

Altogether an enjoyable day, although I got very hungry. However, I had sent one of the men down to the village quite early, with orders to bring up some food at all costs, and when I got back to camp he had arrived with a box of stores, some flour, and some oil. Another man had gone off to Adung Long, a day's journey distant, to collect a few Nung coolies, and as several of the Tibetan herds were going up the valley I made them carry loads up to my alpine hut, whither I proposed to follow so soon as the coolies came.

On October 1, the headman arrived from the Tibetan village, and I almost came to blows with him over the subject of coolies; as a result some did arrive next day, so we moved up to my hut, at 11,000 feet, for three weeks' intensive seed collecting. I found my rock garden intact, all the dwarf, cliff Primulas having set seeds, the tiny P. rhodochroa best. The dwarf purple Iris gave trouble, firstly because the capsules rise directly from the ground level, and were consequently hidden amongst the herbage; secondly, because the yak had been here before me, tramping all over the grass slope. However, before darkness fell I had discovered a dozen capsules—all that was left of them!

For the first nine days in my high camp the weather continued cloudy, with drizzling rain, and showers; it was not cold enough for settled fine weather, the average minimum being only about 43° (lowest 39.5° on October 10, which was a fine, sunny day), and the average maximum about 54°. Then came a drop in the temperature, and a week of bright weather, with icy winds on the mountain heights; average minimum for seven days 34.5° (lowest 33°), average maximum, about 54°.

I began work by collecting seeds of the Primulas, Nomocharis and Meconopsis, making long excursions up the various valleys and glens, and along the ridges climbed in June. But also I went along several new routes, including an ascent of the waterfall cliff; the cascade had almost ceased now, and the weather being clearer I could see what I was doing. From the high ridges it was now possible to see much of the surrounding country, and the mountains being clear of snow, I satisfied myself that there were no real snow peaks in the neighbourhood, and no glaciers, though there were many large permanent snow beds which had been glaciers not long ago. During these scrambles I gradually collected seeds of all the plants entered in my catalogue as likely, and a few others; Lonicera, Anemone, Iris, Ilex, Cotoneaster, and numerous Rhododendrons, including several dwarfs. I did not start on the Rhododendrons, however, until nearly half-way through October.

FIG. 230.—COOLIES AT BREAKFAST.

There were quite a number of flowers, even as high as 14,000 feet; two fine porcelain-blue Gentians, species of Codonopsis, Saussurea, Corydalis, and even Primula melanodonta, flowering freely for the second time. Altogether there was enough work to keep me busy for three weeks; my two coolies, who sometimes accompanied me on these climbs, were unable to stand the biting wind on the heights, and also they were more urgently required getting up stores. I shifted some rations up to the 12,000-feet camp, against the day when we should cross the Diphuk La for the last time; and on October 9 my mail arrived from Fort Hertz. On the 18th, fifteen Taron coolies arrived, but we did not start down till the 20th, and then only went so far as the yak camp, where I spent a day collecting Rhododendron seeds. On the 22nd we returned to the village, and I at once set about preparations for the journey to Assam.
F. Kingdon Ward.

ACCLIMATISATION OF PLANTS.

Although the acclimatisation of plants is a subject of great importance to gardeners, science can give us little guidance as to the temperature necessary to maintain life in any plant new to cultivation. Appearances are deceptive; no one by looking at a plant—not even by a close botanical examination—can say whether it will survive 20° or 30° of frost. What is it that enables a plant to withstand severe cold? It would seem that the plant gradually adapts itself to low temperatures—but how? As gardeners, I am afraid that we have been more concerned in simply finding out this quality than in searching for the reason of it.

A notable attempt has been made during the last thirty years to test the hardiness of the many plants introduced of late and others which had hitherto been grown only under glass. This has been an easier task than formerly because propagation is now better understood, and more practised in private gardens, and surplus plants are available for experimental treatment. Since the war, great strides have been made and many plants once regarded as tender are now developing into large specimens in the open garden. So large and well-furnished have many of these become that it will require a very severe frost or a recurrence of such frosts to seriously affect them.

There are many who argue that such a winter as that of 1895-1896 would effectually clear our gardens of plants which, admittedly unique and beautiful, are regarded as unreliable. Granted that a hard winter would cause severe losses, the fact remains that such frosts occur only at extremely long intervals, and that many of these plants—Abutilon vitifolium, for instance—grow and come to maturity quickly, repaying in a short time any care bestowed upon them.

Some old greenhouse plants (Trachelospermum jasminioides and Abutilon vexillarium may be cited as examples) were rarely presentable under glass, but may now be seen flourishing on many outside walls in the southern counties. Again, there are many plants, to which, even in large houses, it is difficult to allot sufficient space. Camellias, for instance, are nearly always cramped for room, and, as specimens, are not comparable to those grown under favourable conditions outside. This phase of gardening then, although it carries a certain amount of risk and some drawbacks, holds out a rich reward to those, who, making stepping stones of their failures, go on undaunted.

The last decade has been a favourable one; there has been no winter to equal that of 1916-1917 in severity; the low temperature and bitter east winds experienced for so many weeks at that time, severely tested plants from Australia, New Zealand, South America and China. Owing to the war, and consequent shortage of labour, it was impossible to afford them much protection, or to do more than record the killed and injured under headings that often needed further qualification.

Tabulated records are often most contradictory. Thus, in a report carefully prepared by Mr. E. A. Bowles, and issued by the Royal Horticultural Society, one finds that plants of Abutilon vexillarium, grown against a wall at Monreith, were killed and cut down to the ground level respectively, while others in the open were uninjured. In most other gardens a wall proved a safeguard. Gaya Lyalli, now registered as fairly hardy, was cut to the ground at Guildford, and badly injured at Exeter, whereas at Aldenham, Enfield and Kew, it escaped injury. The Chinese plants, principally from the north-west, introduced by the French missionaries, but more especially by Dr. A. Henry and Mr. E. H. Wilson, withstood the test remarkably well. This fact, no doubt, led to further exploitation of that region and increased care in collecting seeds under conditions that would secure the hardiness of the plants raised.

In the late Andean expedition, seeds of some well-known plants were collected from new and cooler districts with that object in view. My thirty years' experience in acclimatising plants in these gardens leads me to attach particular importance to this point. In many cases, notably with Eucalyptus cordata, now thirty or forty feet in height, success was only attained after five or six plants had failed. A similar experience might be recorded of Tea plants, until a dwarf, shrubby kind was found, probably imported from a high altitude, which has not only lived but flourished.

Site, exposure, drainage, soil and the condition of the plant, all vary its ability to withstand frost. Even in favoured counties, sites a few hundred feet above the average level would appear advantageous; the cold air sinks and the higher ground escapes the destructive frosts that are the bane of low, sheltered valleys.

Those parts of Great Britain which are most favourable to the growth of tender plants are usually near the sea; undoubtedly the climate is milder; it is, however, open to question whether this alone is the reason why so many plants succeed in such localities. Exposure to the sun and air, and the increase of light by reflection from the sea, all play an important part in maturing the woody stems of many half-hardy plants. This is well shown at Highdown, where Major Stern contends so successfully with difficulties of subsoil, etc. The value of exposure for numbers of plants, especially those from New Zealand, is exemplified at Wakehurst Place, where species usually over-sheltered, are growing in beds extended into the open park. The sturdy, short-jointed growth obtained is not only more floriferous, but hardier. At Nymans, the gardens are about 450 feet above sea-level, and, but for trees, are exposed to wind from every quarter except the north-west, and though sometimes a cause of loss, we regard the site as beneficial, on the whole.

All gardeners—and many garden owners—know how difficult it becomes, in an already crowded garden, to choose suitable stations for plants. So long as new ground is being taken in little trouble is experienced. There comes a time, however, when extension is no longer possible, yet new plants are continually arriving, and places must be provided for them. It is then that sun-loving plants are often placed between taller specimens, and are cut off from air and sunlight, except for a short period of the day. Plants so placed may, in the event of destruction by frost, be recorded as killed or injured but they provide no evidence of the hardiness of a species. The differences which make for success or failure are very slight. A position on a dry bank where a plant grows slowly and matures thoroughly will sometimes prove successful for plants that have hitherto failed completely.

Shelter from the north and east may take many forms, such as hills, woods, belts of trees, hedges, walls and evergreen shrubs. The piercing winds from those points during prolonged frosts are much to be dreaded; they dry out the sap from evergreens when there is little chance of it being replaced. It seems almost a paradox to state that the lower half of an exposed north wall is a sheltered place, but it is so in practice, especially if there is protection on the east; probably air currents form a curve before reaching the wall in order to surmount it.

Soil greatly influences the hardiness or otherwise of plants; in rich soils the growth is so gross that it is with difficulty ripened before the advent of winter. Very dry soils, too, have a distinct disadvantage in that growth is often checked by drought and commences again in late summer or autumn, only to be destroyed by frost. A soil of medium quality, containing a fair quantity of grit or stone would appear ideal.

The condition of the plant is of great importance; the need for inherited hardiness has already been stressed, but the individual plant should also have a good start in life. It should not be subjected to undue heat in propagation, but grown hardily from the first and acclimatised so much as possible. Early planting, say, in March or April, will allow it time to become established before winter. To meet competition, the nurseryman is often obliged to grow plants thickly together and sell them when they are rather small and weak. If dwarf enough they may be grown on in frames. Taller examples are more difficult to deal with. Too often they are housed in late fruit houses, which need to be kept warmer just when the plants should be receiving free ventilation.

The question of protection has caused much controversy and gardeners are about equally divided concerning its advantages and disadvantages. There are times when protection is very useful, especially to young plants, and it is astonishing what a small amount is sometimes sufficient to save life. This was forcibly brought to my notice many years ago, when mourning a plant of Rhododendron indicum, apparently totally destroyed. A Musa leaf had been dropped on a part of the plant, pressing it to the ground, and the portion thus protected escaped injury.

Those who should be experienced in this matter tell us to use dry covering only, and that if it is wet it is worse than useless. There is little doubt that a dry covering is most effectual; but frosts usually last for a few days and sometimes weeks. If there is the slightest sleet or thaw, the coverings will become wet, and in how many large gardens is it possible to remove and dry them?

In the years before the war we protected a considerable number of large plants, and the operation rarely occupied less than three or four days of steady work. The method which proved to be most effectual was to cover the roots heavily with leaves or Bracken, and secure mats or evergreen boughs at a distance of about eighteen inches from the plant, either by making a wigwam over it or, in the case of wall plants, by leaning poles against the walls and covering them. In every case a space between plant and covering should always be secured. In the future it may be possible to decide by examination the hardiness of a plant, and not only to foretell frost, but also its severity and duration sometime before hand; when that day arrives gardening will have advanced one step nearer to becoming an exact science. *J. Comber, Nymans Gardens, Handcross, Haywards Heath.*

NOTICES OF BOOKS.

Gardens Old and New.

The publishers of that excellent Berlin gardening journal, *Gartenschönheit*, have a pleasant habit of getting people to write discursively about something which interests them enormously—such, for instance, as the planning of their own garden in a setting of glorious mountain and river scenery—and get together a number of photographs to illustrate their exuberant outpourings. Of this most promising material the publishers make books, squarish and flat, printed in generous Latin type (no crabbed Gothic for them) on good, clean, white art paper, for the delectation of all who love gardens and garden making, and can read German. In *Saaleck*[*] we have a fascinating story of the making of a garden and a house—this order we feel sure the author would consider correct—from the nucleus of an older one, in the lovely Saalfeld district of Germany, overlooking the Saale River. Every nook and corner of the estate, every wide-flung river and mountain and forest view is pictured to arouse the envy of the reader. Or, his emulation, if his means will allow it. But this garden-making business is an expensive one, contrive how one will.

In the second of the books before us,[†] the theme is still garden-making, but this time we are taken back to the seventeenth and eighteenth centuries, and even earlier, and shown the gardens made in and around Danzig, all those years ago. If one asks, why particularly Danzig? the answer is that the publishers are wise enough to know that if they have found someone—in this case, Herr Hans Reichow—who is tremendously interested in ancient garden-craft in Danzig, he will know how to make his readers interested too. Moreover, gardening went in fashions then, as it does now, and the gardens pictured in this volume resemble surprisingly the English gardens of the same periods—possibly designed, in part at least, by the same landscape gardeners, people like Le Nôtre, who went from place to place shedding little Versailles and Marlys all over Europe. This is the sort of book to take on a railway journey, or with which to make the most of a snatched half-hour in an easy chair in front of a good fire.

Flowers in the Home.

Broadly, there are three methods of arranging flowers for home enjoyment. These may be termed the specimen flower, the natural, and the display. A single bloom, or a spray, placed in a suitable vase gives pleasure to the real lover of flowers, while others prefer their flowers to be arranged as naturally as possible, either with their own or some other foliage which could appropriately be associated with the growing plant. The display style is frankly artificial in its conception and, provided harmony is attained, different flowers and any foliage may be used.

With these general principles the writer of *Flowers in the Home*[‡] seems to be thoroughly conversant, but, unfortunately, the illustrations are not happy examples of the infinite possibilities of the floral decorator's art. In the frontispiece of white Tulips the flowers are almost lost in the light background. The bowl of Coltsfoot gives no suggestion of the peculiar charm of these early spring, wild flowers which would not thrive amidst dominant foliage and, unless arranged naturally, one feels they should have no place on a polished table. The sparse vase of "Statice latifolia and spent Spiraea" would appeal to very few and the sprawling sprays of Holly are far from being characteristic of our most cheerful native evergreen.

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[*] *Saaleck.* Von Paul Schultze-Naumburg. Verlag der Gartenschönheit, Berlin Westend. Paper M.4, linen M.6.

[†] *Alte Bürgerliche Gartenkunst.* Von Hans Reichow. Verlag der Gartenschönheit, Berlin Westend, Paper M.4, linen M.6.

[‡] *Flowers in the House*, by Irene Watt. Published by A. and C. Black, Soho Square, London. 2s. 6d. net.

But one appreciates the difficulties of illustrating a book of the character of that under review. Most of us who have been responsible for floral decorations of any pretensions have regretted that what we, at any rate, have considered our most successful attempts, could not be photographed. So that, unless such a book were long anticipated, the writer could rarely depict her own work. Mrs. Irene Watt has written a very pleasant little book—perhaps all the more agreeable reading because it is discursive—which, while describing many attempts also contains suggestions for decorations for various occasions and positions. The advertisement of the book states that the proceeds go to the Edinburgh University Settlement. *A. C. B.*

MESEMBRYANTHEMUM.

(*Continued from page* 471).

12.—GLOTTIPHYLLUM, HAW.

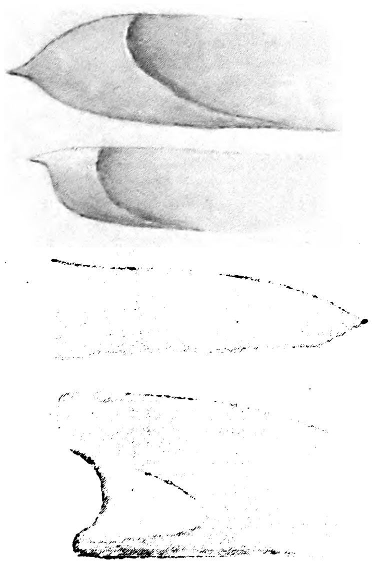


FIG. 231.—GLOTTIPHYLLUM ERECTUM.

Apical part of three leaves, and base of a leaf showing the pustule, all from one plant; natural size. Flowers pedicellate.

17. **G. erectum, N. E. Br.** (Fig. 231, and p. 291, Fig. 132).—Stems elongating, decumbent or prostrate, and up to 8 inches long, 4 lines thick, sparingly branched with 2–3 pairs of leaves at the end of each branch. Leaves usually in 2 ranks, but sometimes the pairs obliquely cross one another, distinctly erect or ascending, 2½–5 inches long, ½–1 inch broad and 3–5 lines thick, these variations even on the same plant at the same time, strap-shaped, with parallel sides for ⅔ of their length, then tapering to an acute or obtuse apex, which is apiculate, at least when young, flat or slightly convex on the face, convex on the back, not keeled, and all similar at the tips, soft and pulpy; surface smooth, glabrous, deep grass-green. Pedicel 1½ inch long, 1¼ line thick, erect, terete, glabrous, green. Calyx subequally 4-lobed, green, triangular and about 5 lines in diameter when in mature bud, the outer lobes 6–7 lines long, 3 lines broad, ovate-lanceolate, acute, and acutely keeled down the back. Corolla 2–2¼ inches in diameter, expanding in the morning in full sunshine only, closing about 3 p.m.; petals 40-45, in 2–3 series, slightly ascending, spreading (not horizontally spreading), 12–13 lines long, ¾–1 line broad, linear, obtusely pointed at the apex, entire, bright clear yellow on both sides, but scarcely or slightly shining. Stamens very numerous, erect, 3–3½ lines long; filaments not bearded, yellow; anthers light orange-yellow. Stigmas 8, ascending, ¾ line long, plumose, yellow.

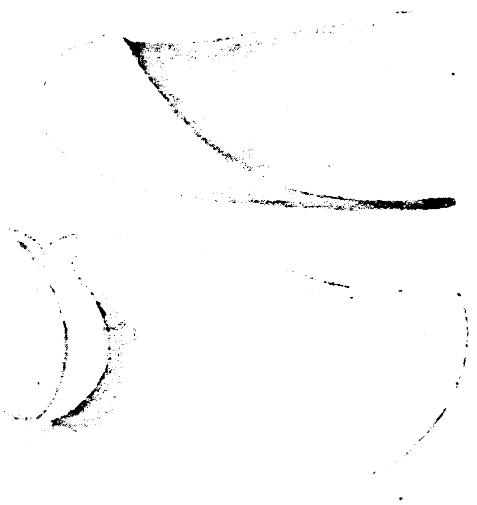


FIG. 232.—GLOTTIPHYLLUM GRANDIFLORUM.

Leaves and pustule, natural size, except as to length; adapted from Salm Dyck. Flowers sessile.

Victoria East Division: Near Alice, Leslie.

This is the plant which, in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327, Fig. 146 I thought might be G. pustulatum, but now that I have obtained from Dr. Muir the true G. pustulatum from Uitenhage Division I find to be quite distinct and well characterised by the constantly erect or ascending and acute (not obtuse) leaves. A living plant with fruit upon it, from which I raised several plants, was sent to me several years ago by Mr. T. N. Leslie. Fig. 231 shows the character of the apex of the leaves, by which it may be distinguished from G. pustulatum, and also the pustule.

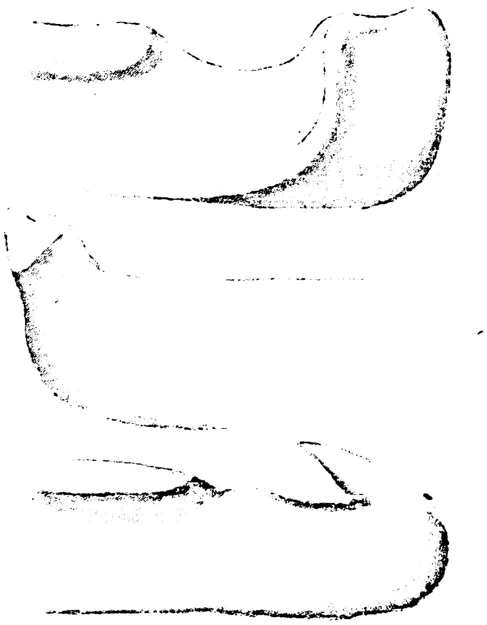


FIG. 233.—GLOTTIPHYLLUM MUIRII.

Apical halves of three leaves, natural size; all from one plant. Flowers sessile.

18. **G. grandiflorum, N. E. Br.,** in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327 (Fig. 232).—Growths prostrate. Leaves in two ranks, slightly sloping downwards and adpressed edgeways to the ground, 3–4 inches long and an inch or rather more in breadth, strap-shaped, flat on the face, with a large pustule at the base, convex on the back, obtuse and slightly hooked or upturned edgeways at the apex, and the larger of each pair with an oblique keel on the face near the apex, very fleshy, pale green. Flower sessile. Calyx 4-lobed, with ovate lobes apparently about as broad as long. Corolla 3–4 inches in diameter, scarcely scented; petals in two series, cuneately linear, obtuse and minutely toothed at the apex.

Mesembryanthemum grandiflorum, Haw., in *Phil. Mag*, 1826, Vol. LXVIII, p. 327; Salm Dyck, *Mes.*, §8, f. 3. M. linguiforme var. grandiflorum, Berger, *Mes. und Port.*, p. 242.

South Africa: Locality unknown; introduced by Bowie in or before 1826.

This fine species appears to have died out of cultivation and has not been rediscovered. I have never seen it. Fig. 232 is adapted from Salm Dyck's figure quoted above.

19. **G. Muirii, N. E. Br.** (Fig. 233).—Growths bent towards the ground. Leaves spreading, more or less sloping downwards, in two ranks, usually 3–4½ (but occasionally up to 6) inches long, 10–15 lines broad and 6–7 lines thick at the middle, straight or but slightly curved edgeways, strap-shaped, with parallel sides, but with the tips of both leaves of a pair upcurved-hooked edgeways, and the hook obliquely-truncate or irregularly shaped and obtuse or very acute, flat or faintly convex on the face, and the face of the larger leaf with an impression of the opposed leaf upon it, forming a ridge along the margin at the middle part and an obliquely transverse ridge below the apex, convex and not keeled on the back; surface smooth, but under a strong lens seen to be covered with transversely-elongated, raised surface-cells, deep grass green. Flower sessile. Calyx triangular and about 6–7 lines in diameter

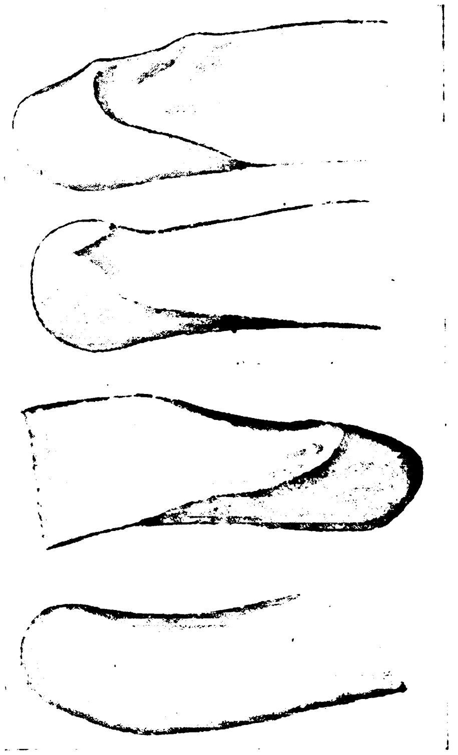


FIG. 234.—GLOTTIPHYLLUM CARNOSUM.

Apical part of leaves from one plant; natural size. Flowers sessile.

in bud, 4–lobed, lobes 4–7 lines long; 3–4 lines broad, 3 of them keeled and 2 distinctly ciliate on the keels, the inner with broad membranous margins. Corolla opening in the morning in dull or sunny weather, 3–3¼ inches in diameter, not scented; petals numerous, free or nearly so, in two series, somewhat wavy, as if from crumpling in bud, 16–18 lines long, 1½–2 lines broad, linear, obtuse and usually minutely toothed at the apex, bright clear yellow. Stamens numerous, 7–8 lines long, erect and collected into a central mass, concealing the stigmas, light orange-yellow. Stigmas 8, about 1¼ line long, plumose, whitish.

Riversdale Division: In the Klein Karoo, 1,200 feet above sea level. Muir 3876!

This is a very fine and distinct species, quite unlike any other, and I have therefore dedicated it to its discoverer, Dr. J. Muir, who has helped me so vigorously in this work with specimens and information. Dr. Muir writes (June 2, 1926), concerning the two extreme forms that exist in nature of the various species of this genus, as previously noted, that he "had both extreme forms (of G. Muirii) and of which the smaller, harder form had remained as such since 1924, has now during the past few weeks undergone a change and become greener and juicier, and are quickly assuming the other form." This and other species Dr. Muir states are popularly called by the Dutch colonists "Skilpadkos," *i.e.*, "tortoise food." The plant from which my sketch (Fig. 233, p. 489) was made, was sent to me as being one of the "smaller and harder" forms.

20. G. carnosum, N. E. Br. (Fig. 234, p. 489).—Growths apparently tufted or crowded upon the top of the rootstock, more or less depressed towards the ground. Leaves in two ranks, very spreading, 1½–3 inches long, usually 9-10, but sometimes up to 13 lines broad, 4–7 lines thick, more or less strap-shaped with parallel sides, usually slightly curved edgeways downwards, and one leaf of a pair recurving, sometimes very slightly upcurved edgeways (but not at all hooked) at the apex, one leaf of a pair flat and the other slightly convex on the face, and the larger leaf produced beyond the oblique ridge where the flat face ends and obliquely keeled, very convex on the back, obtusely and often obliquely rounded at the apex, rarely with a minute apiculus; substance thick, soft and pulpy; surface smooth, but with minute, raised, linear, transverse surface-cells as seen under a strong lens, glabrous, grass-green, not pellucid-dotted. Flowers sessile. Calyx 8–9 lines in diameter in mature bud, acutely 3–angled, unequally 4-lobed, with three of the lobes acutely keeled on the back, the two larger 8–9 lines long and about 4 lines broad, ovate, acute. Corolla 3 inches in diameter, cup-shaped, opening in sunshine, slightly scented; petals about 45, in 1–2 series, 1½–1¾ long when fully developed, 1–1⅛ line broad, linear, with subacute and more or less revolute tips, bright clear yellow, scarcely paler on the back, not shining. Stamens erect, lax, about ½ inch long, entirely light yellow. Stigmas 6–8, radiating, about 2 lines long, plumose, whitish. Capsule when closed, 4½–5 lines in diameter, convex and without ridges at the top, with 6–8 valves and cells, and when expanded 7–8 lines in diameter; valves horizontally spreading; 2½ lines long and 2 lines broad, light brown; expanding keels dark brown, without an awn-like or membranous tip, otherwise the structure is the same as for the genus. Seeds about ½ line in diameter, somewhat angularly subglobose or irregularly ovoid, with a very small nipple, minutely tuberculate, dark brown.

Ladismith Division: Between Plathuis and Touws Berg, 2,000 feet above sea level, growing in open places among loose shingle, Muir 3894!

When Dr. Muir sent a plant of this species to me he commented upon the greyish-green appearance of its leaves, and when received the leaves certainly had a slight greyish-green colour, but the fresh leaves that it has made are grass-green; whether they will become greyish during hot summer weather remains to be seen. *N. E. Brown.*

(*To be continued*).

IDEAL GARDENS AND PLANT LORE.

THE GARDEN OF THE MADONNA.

The site shall be a sequestered glade opening out to the south and west, sheltered from Boreas and protected from the east wind by a grove of trees. In their genial shade we will raise a suitable arbour from which it will be possible to see, through a considerable portion of the year, in constant succession, some of the plants which have for ages been devoted to Our Ladye. As the number is great it will be impossible to give all the traditions and legends associated with their names, but as complete a list as possible will be supplied so that each garden may have at least a selection from the Virgin's garland.

Let us take first some of the trees and shrubs which tradition has associated with the Madonna and the Holy Child. Some of these afforded protection against the heat of the sun or the men of evil design who followed them in their flight, while others were honoured because they supplied food and nutriment. As Professor de Gubernatis puts it:—

> *Pour soustraire sou fils aux Sicaires d'Hérode, la vierge le cache sousdes plantes et des arbrisseaux que, naturellement, elle bénit.*

According to a legend which long survived in Tuscany, it was the Juniper which saved the lives of the Virgin and her child during the flight into Egypt on which account it is peculiarly effective in counteracting magic, exorcising evil spirits and rendering charms powerless. The whereabouts of the fugitives were betrayed by the crackling of the seed vessels of the Broom and other plants, but the Juniper enfolded them in its embrace and secured them from harm. Hence the custom in Italy of hanging branches of this tree in stables and cattle sheds on Christmas Day, just as we hang Holly and Mistletoe in the hall. The plant-lore of the Juniper is consequently very profuse, and is well worth reading up by those interested in our subject.

The graceful Weeping Willow will also find a place here, since this plant did for the Virgin exactly what the Juniper did—bending its branches earthward to hide the mother and her son when in danger. To this must be added the fragrant Rosemary, which in Spain takes the place of the Juniper in legendary lore. Nor must the Hazel be overlooked, since it once afforded shelter to the Virgin when she was overtaken by a storm on her way to visit her cousin Elizabeth. The Arbor Vitae finds its place here because it is used on December 8 at the Festival of the Conception.

Among the fruit trees which are associated with the name of Mary the Palm must have pride of place. The legend has been frequently repeated. Passing through the desert, the Holy Family came to an oasis and took shelter from the excessive heat under the shade of a Palm tree. Looking up, the Virgin saw the fruit and desired Joseph to procure some for her refreshment. The good man marvelled that she should express such a desire, but at a word from the babe the tree inclined its head and allowed her to eat at her pleasure. When her needs were met the tree still remained in its bent position until released by a word from the Christ child. The Palm is upright in consequence, but the Willow weeps because from its branches was made the scourge employed at the trial of the Saviour. A similar legend attaches to the Cherry to that which is told of the Palm, and we may therefore legitimately plant this tree in our Madonna's Garden.

> "Before our Saviour's birth, the Virgin Mary, strongly desiring to refresh herself with some luscious Cherries that were hanging in clusters upon the branch of a tree, asked Joseph to gather some for her. He hesitated, and mockingly said: 'Let the father of thy child present them to thee.' Instantly the branch of the Cherry tree inclined itself to the Virgin's hand, and she plucked from it the refreshing fruit."

On this account the Cherry is dedicated, among other fruits, to the Virgin.

To her use also the Strawberry is set apart, while a species of Bean is, in the Isle of Harris, named after her, the Virgin Mary's Nut. But these more rightly find a place in another part of our garden. Here, however, we must make note, among other fruits, of the Orange and Almond, the Fig, Olive and Pomegranate. Caballero has published a popular Andalusian chant in which the Orange is associated with the Madonna. When she and Joseph were travelling with the infant Jesus they came upon an Orange tree which was under the protection of an eagle. A single fruit for the child was asked for by the mother, and the eagle promptly fell asleep. When one Orange had been picked for the babe a second was culled for Joseph and a third for the mother. Not till then did the eagle recover its sight. The original Spanish is given by de Gubernatis in his valuable *Mythologie des Plantes* (Vol. II, page 267), with an interpretation of the legend, a comparison with the Golden Apples of the Hesperides, and a number of other illustrations of the use of the Orange in the plant lore of the Madonna and her child. The Almond was dedicated to Mary in her rôle of Queen of Heaven. In Christian art one often finds the infant Christ represented as holding the fruit of the Pomegranate in his hand and presenting it to his mother. Either the Pomegranate or some other pomaceous fruit figures in a Roumanian chant which has been preserved by Marianescu in which the infant Christ is represented as lying in his mother's bosom weeping. To calm him she puts two Apples in his hand. These he throws away and one becomes the sun while the other gives origin to the moon. After witnessing this exploit, the Virgin announces him and promises that he shall become the Lord of Heaven.

The Olive is regarded as a fit emblem of the Madonna as the mother of Christ. It is the symbol of peace and he the Prince of Peace. Our list of fruit trees would not be complete if we omitted the Fig. During long centuries there was pointed out near the City of Ou, or Heliopolis, the sacred Fig tree under which the Holy Family rested during the flight into Egypt. Here is a recent allusion:—A little beyond the village of Malaria, to the north-east of Cairo, in a "shady garden of rich shrubs and flowers, with the French flag flying from a restaurant at its entrance, encloses the noted Virgin's Tree, beneath whose shade the Holy Family took shelter, so 'tis said, during their flight into Egypt. It is a huge Sycamore, with gnarled and knotted trunk, some ten feet in diameter, throwing out mighty arms which again branch and spread widely, and bear a luxuriant weight of foliage." (*An Eastern Afterglow*, p. 43). Though very old, it is said to bear fruit every year, for the tree is not the Sycamore or Mock-Plane, but the Fig-Mulberry or Sycamore. Dr. Prior and others have explained the cause of the confusion and traced the legend, with its variants, back to very early times. Some state that the Sycamore opened to receive the fugitives, then closed upon them, opening again after the pursuers had passed. It remained open until the year 1656, when the part of the trunk which had separated itself was broken away. The wood of this tree (Ficus Sycamorus) is very durable, and has long been employed by the Egyptians for coffin making and other purposes.

We turn from these trees and shrubs to seek suitable plants with which to construct an arbour. Every reader will recall in the first place the Clematis or Virgin's Bower. It is true that Gerard employed the term on account of its shady growth, and that the name may have been used at one time out of compliment to Queen Elizabeth, but every one now thinks of it as the plant which formed the bower of the Madonna. Fortunately, we have to-day many lovely forms of Clematis, and shall therefore find no difficulty in selecting such as will best serve our purpose. There is another native plant, however which will be useful for trailing over our rustic arbour, viz., the Black Bryony (Tamus communis), which bears the English name of Our Lady's Seal. This term, as well as Lady's Signet, is also applied to the plant usually known as Solomon's Seal. Dr. Prior (*Popular Names of British Plants*, page 132) goes into the history of these names, and supplies a score of others, to some of which allusion will be made later. We shall naturally utilise the Rose either for bower, arbour or pergola. "As an emblem of love and beauty (says Folkard, in his *Plant Lore, Legends and Lyrics*, page 518), the Queen of Flowers was specially dedicated by the Romish Church to the Virgin Mary. She is the Rose of Sharon, the Mystic Rosa (Rosa mystica), as well as the Lily of the Valley. In old Italian paintings of the Madonna a plantation garden, or hedge of Roses, is often introduced, enclosing the principal figure." Later, we shall find that one or other of the Honeysuckles also find a place here.

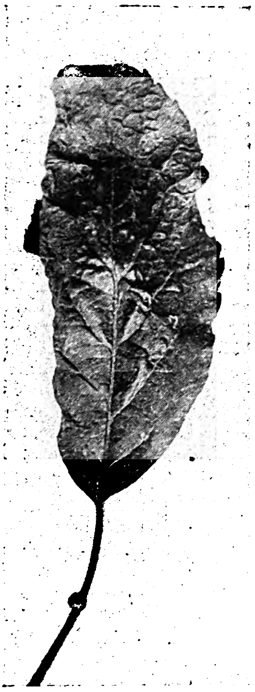


FIG. 235.—ANTHOCORIS SP. ON UNDER SURFACE OF APPLE LEAF.

Here, then, in our Virgin's Bower for the nonce we may rest. Around us flourish fragrant plants, such as the Rosemary and Juniper; the Weeping Willow will serve us for shelter when we wish to change our position, while the various fruit trees—Apple and Orange, Fig and Pomegranate, Olive, Date Palm and Cherry—will supply us at one season or another with all we may require for refreshment while we lay our plans for the ordering of the beds which will yet be needed for the many plants devoted to the Madonna. *Hilderic Friend.*

(*To be continued.*)

DAMAGE BY FROST OR PESTS?

A SHORT time ago, Mr. Ware, of Wye College, published an article dealing with damage by frost to fruit trees, in which he showed photographs of leaves exhibiting extensive crinkled areas.

Whilst inspecting some small Apple trees this season—varieties Emperor Alexander and Lord Derby—the writer observed similar effects upon the foliage to that described by Mr. Ware. The fruits, however, displayed no familiar signs of frost damage. On a close examination of the undersides of the foliage a small insect was observed embedded in the tiny cracks or fissures made by the crinkling of the leaf surface. Specimens were submitted to Mr. F. Laing, of the British Museum, who identified them as nymphs of a species of Anthocoris, belonging to the Hemiptera.

The species of this genus are predaceous; they play some part in the control of various insects found on plants, including aphides.

It would be interesting to know:—(1) If the damage to the leaves was caused by the nymphs; (2) or if the frost was responsible for damage, and the nymphs found the fissures a suitable place in which to pupate; or (3) if the damage was the result of aphis attack and the nymphs were there because of their predaceous habits.

About twenty-five to thirty per cent of the leaves were affected on Emperor Alexander and about ten per cent. in the case of Lord Derby.

The accompanying illustrations (Figs. 235, 236, and 237) show the type of damage, and photomicrographs of the nymphs in situ. *Theodore Parker.*

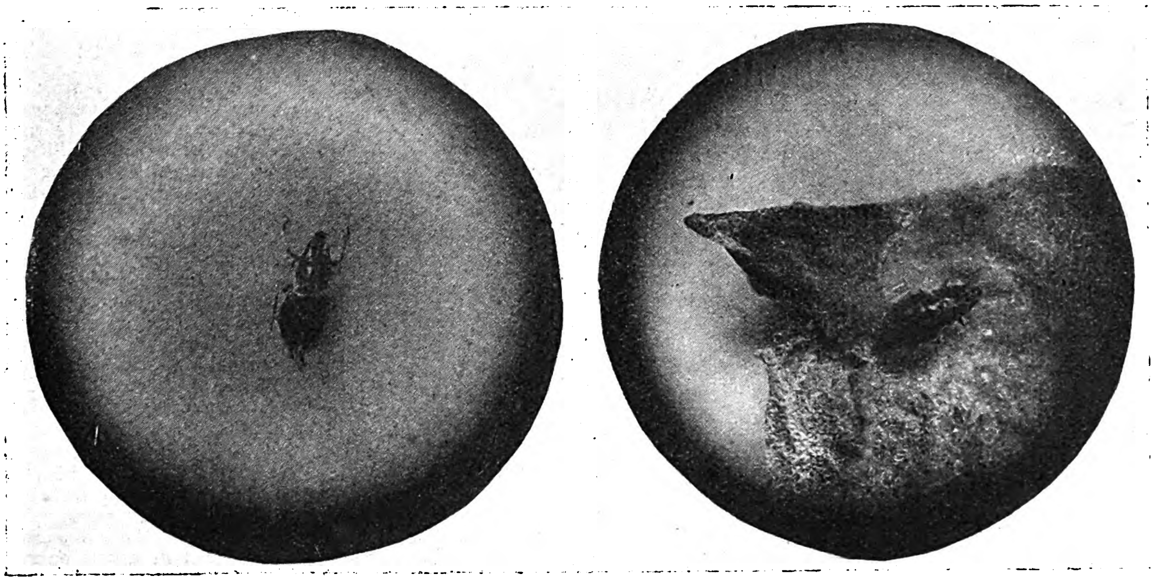


FIG. 236.—ANTHOCORIS SP., PREDACEOUS ON APHIDES.

MARKET FRUIT GARDEN.

THERE was a return to wet weather conditions during November, the rainfall (3.50 inches) being considerably over the average for that month. However, this did not cause much interruption to work. The packing staff, having dealt with all the Apples except those that have been put into store, turned to pruning, which is always their winter job. The other hands were engaged in hoeing or scraping the weeds out of the rows of bush fruits, in preparation for the application of manure. The weeds now lie between the rows, and will probably remain there until early spring, when I hope there may be a spell of weather dry enough to enable me to kill some of them by means of

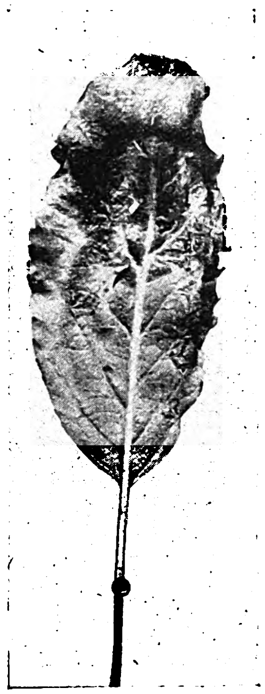


FIG. 237.—ANTHOCORIS SP. ON UPPER SURFACE OF APPLE LEAF.

horse cultivation before it becomes necessary to plough a little soil up to the bushes to cover the manure. If there is no opportunity to kill the weeds, then ploughing will have to be managed without it, and plenty of cultivation and hoeing done afterwards. Digging the weeds in between the rows would, no doubt, make the best job of it. This is the method followed with great success by small growers, but it would be a long and expensive business on a large scale. I shall have to do this in the case of some small plantations of Black Currants, where the bushes have grown too large to allow of ploughing. The problem of cleaning bush fruit quarters is, of course, unusually difficult this season, because there was no chance to deal with weeds during the early autumn—in fact, they have hardly been checked since the dry weather in May.

Manuring Bush Fruits.

I believe I have enough farmyard manure to dress all my bush fruits this winter. A neighbouring dairy farmer delivered it at intervals during the summer with a motor-lorry; and there are two large heaps in excellent condition for spreading. In recent years I have relied too much on substitutes for farmyard manure. Meat and bone-meal, with the addition of sulphate of potash to make a complete manure, answers very well; but I find that the best growth and the heaviest crop always follow the use of farmyard manure. Quite a light dressing of this suffices, if it is supplemented by meat and bone-meal. The superiority of the farmyard manure probably lies chiefly in its mechanical effect on the soil. Bush fruits appreciate it as a rooting medium, particularly in a dry season. For Gooseberries, farmyard manure is particularly desirable. Mine did well for a few years on the substitute mentioned above; but this season they have made very little growth, and will have to be dunged liberally. The meagre growth is rather surprising, as frost robbed them of quite half their crop and they have not been checked by mildew or aphis. I consider, however, that the season has produced less than normal growth in all fruit trees and bushes.

Stored Apples.

The bulk of my crop of Bramley's Seedling has been stored, as it seems likely that there will be a substantial rise from the present miserable price early in the New Year. So far, they are keeping very well indeed. Some of them are in a fruit store which has been adapted for operation on the air-cooled system. This store was made many years ago by partitioning off one end of an old barn, building inner walls of boarding, and providing a ceiling under the lofty roof. The space between the walls was filled with saw-dust as insulating material to help in maintaining an even temperature. There were several ventilators at the top of the walls, opening to the inside of the barn. I have now had ventilators made at the floor level, through the walls to the open air, and a shaft built up from the middle of the ceiling. When these are opened a draught of air is created. The object is, of course, to reduce the temperature inside the store by opening the ventilators when the temperature is lower in the open than it is inside the store. When the conditions are reversed the ventilators are closed. The draught is supposed to assist further by carrying away the gases which collect about the Apples for a time after they are first placed in the store. It is too early, of course, to form any opinion as to whether this ventilating system has improved the store; but I am rather disappointed to find that the place takes a long time to cool down, and that it never gets as low as the minimum temperature outside. So far there has been no really severe weather, but I opened the ventilators on such frosty nights as we have had, and have not succeeded in reducing the temperature inside below 40°. I can, however, hold it at that, with closed ventilators, during a period of warmer weather. I am told that this is low enough, and that it is not advisable to get it down below what is likely to be maintained, an even temperature being the main thing. For two or three weeks after the Apples were stored away they evidently heated a good deal, for the thermometer used to rise considerably above the outside temperature when the ventilators were closed. This, no doubt, accounted for the time taken to get the temperature down in the first place. It was certainly a wonder to me to find that it remained 10° above freezing inside the store on a frosty night. It is amusing to think that, when the store was in its original form, I used to be afraid that the Apples might become frozen. In America, air-cooled stores have proved very successful, as have several that have been made in this country in recent years. The system, therefore, is not in doubt. If mine does not answer it will mean simply that my ventilating arrangements are inadequate and need improvement. In other buildings I have Bramley's Seedling in heaps or clamps under straw. These will serve to compare with the fruit in the store.

Apple Allington Pippin.

Market growers do not make many mistakes in adopting Apples for commercial culture. If they err at all, it is probably in the direction of excessive caution. They were apparently wrong, however, in planting Allington Pippin, though it is difficult to fathom the reason. In my opinion this is a delicious Apple, provided that it is allowed to hang on the tree long enough to acquire its full, almost Pear-like flavour. Moreover, as grown in my conditions, and in many other places as well, it is brightly coloured. Here, then, we have a coloured Apple of good quality, which is what the public are supposed to want. Yet it is a most unsatisfactory Apple to sell, the price always being low and the demand slow. In my local south coast markets it has a very bad name and is hardly wanted at all. In the north it is rather more appreciated; but my experience is that the extra price secured there is scarcely enough to justify the expense of the long journey. I can only conclude that the public do not agree with my estimation of the flavour. It is possibly a trifle too acid for most people.

A retailer tells me that Jonathan is the most popular Apple on sale at the present time. This is exceedingly sweet and rather soft, though no doubt its brilliant red colour is one of its chief attractions. Allington Pippin's low reputation has been earned partly by the mistake made by some growers of putting it on the market long before it has any flavour. Moreover, on some soils it does not colour well. If it is not to become popular, and it is too late to hope for that now, it is a most undesirable variety to have in a market plantation, for it gives a great deal of trouble. No variety takes longer to prune, owing to the forest of laterals made each year; and it is subject to most of the pests and diseases which are found upon Apples. American blight is more often serious on this variety than on any other; and it is one of the most difficult to keep free from scab. It has the virtue of being exceedingly prolific, though in alternate years only; so the enormous bulk of fruit possibly prevents it from being an unprofitable variety.

Thinning Out Plantations.

Last winter I grubbed a great many trees in my plantations, chiefly Apples, where they had outgrown the available space and become overcrowded. One always feels reluctant to take this step and sacrifice trees in full bearing; but it has undoubtedly paid. In this sunless season it has been unusually noticeable that Apples coloured well only where fully exposed. On trees against hedges, or where overcrowded the fruit was very slow to colour. Where the grubbing had been done it was quite obvious that the Apples coloured very much better. The extra space was also much appreciated when spraying. Some of my Plums would be all the better for more space, but they are too old to benefit from grubbing now. Where overcrowded, they tend in time to bear only towards the tops, and the lower branches gradually die out. Young men who intend to enter the ranks of market growers would do well to take to heart the object lessons on the evils of overcrowding to be learned in many of the older plantations. *Market Grower.*

FRUIT REGISTER.

APPLE BRABANT BELLEFLEUR.

Quite recently several varieties of Apples were sent me for determination and amongst them was the above-named variety. This excellent culinary Apple is of such great merit that one wonders why so many fine old sorts are not in greater demand. Many of them are equal, or even superior, to newer varieties. Several orchards in the Bromyard district contain well-grown trees of Brabant Bellefleur and the fruits command as ready a sale as the best specimens of Newton Wonder.

The fruits are large, three to four inches wide, and three to four inches high, roundish-ovate, inclining to oblong or conical, ribbed on the sides and narrowing towards the eye. The skin is greenish-yellow but changes to lemon-yellow as it attains maturity, when it is striped with rich crimson on the sunny side. The eye is large and open, set in a wide and angular basin. The stalk is short, inserted in a deep russety cavity. The flesh of this Apple is yellow to white, firm, crisp and juicy, with a sugary, aromatic and pleasantly sub-acid flavour. Brabant Bellefleur continues good until the end of April. The variety is also known as Glory of Flanders, but is quite distinct from Flanders Pippin—an Apple grown largely in Berkshire orchards. *Pomona.*

PEAR PRESIDENT BARABE.

Having grown this Pear for many years, I unhesitatingly accord it a high position amongst late varieties. Its one fault is a tendency to produce rather weakly growths.

The fruits are of medium size and dull greenish-yellow colour; the flesh is melting, sweet and exquisitely flavoured. President Barabe ripens in February and March. The tree is best accommodated against a south wall and succeeds in cordon form.

Although introduced to cultivation so long ago as 1877—it was raised at Rouen, France—President Barabe is infrequently grown, and would, if better known, receive much greater appreciation as a variety for late use. *Ralph E. Arnold.*

VEGETABLE GARDEN.

WINTER CARROTS.

The Carrot is a very important vegetable and is always in demand but, whereas the supply of mature roots during the winter and spring months presents no difficulties, the supply of young, succulent roots for use as a table delicacy during the winter calls for greater attention.

In favourable localities and under good cultivation, outdoor supplies may meet demands during the early winter months. On a warm, sheltered border, with well-prepared soil, sowings made so late as September provide small but serviceable roots well into the New Year in normal seasons, but growth becomes stunted after this period, the young roots lose their delicacy of flavour, and it becomes necessary to resort to frame culture for dependable supplies.

For this purpose, well-prepared hot-beds should be made up at intervals from December onwards to ensure successional supplies until early outdoor crops are again available. The most satisfactory hot-beds consist of stable manure and leaves in about equal proportions; this material, when well mixed and thoroughly compacted, gives a steady heat over a considerable period, conditions which suit the growth of the young Carrots admirably. If stable manure is not procurable, leaves alone, or leaves mixed with green garden refuse, make quite good hot-beds and give equally good results. Under these conditions growth is quick and there is no doubt that it is aided by the increased amount of carbonic acid gas resulting from the decomposing hot-bed material, as well as from the heat generated. *W. A.*

THE GLOBE ARTICHOKE.

The immature flower heads of the Globe Artichoke are much esteemed as a vegetable and certain portions, when bottled, form a useful addition to the winter menu.

It is essential that the soil for this vegetable should be light and well-drained; a thorough preparation of the site should be undertaken during the winter, trenching the ground and adding a liberal quantity of well-rotted manure. A heavy soil may be improved by the use of liberal quantities of road grit, or of light, sandy soil. Planting may be undertaken in March or April, and it is an excellent plan to place groups of these plants in rows three or four feet asunder, allowing about three feet from group to group; a mulching of manure will prevent undue evaporation and, during dry weather copious supplies of water will be needed. In October or November a good mulching of dry straw or other suitable protective material should be applied, but removed in spring, when the ground should be lightly forked and receive a light dressing of rotted manure.

Propagation may be effected by seeds or suckers, the former sown under glass in early spring, and the latter detached from the parent plants so soon as they have made a fair amount of growth in April or May. Seeds cannot be recommended as a means of raising stock, as a large percentage of the seedlings will prove useless; suckers should be procured from carefully selected varieties.

Given reasonable attention, a planting of this vegetable will give excellent produce for several years, provided a warm, sunny position is chosen for them.

The Green and Purple varieties will meet all ordinary requirements, and the former will usually command most favour. *E. A.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible fo the opinions expressed by correspondents.

Pea, Amateur's Pride.—Mr. James Findlay's note on p. 473 of *The Gardeners' Chronicle*, regarding Pea Amateurs' Pride, made most interesting reading; but it occurred to me that Mr. Findlay would have had a great disappointment if after his elaborate preparations in digging a trench two feet wide and two-and-a-half feet deep, and giving such a generous supply of manure, he did not get a bumper crop. I doubt if there are many amateurs or private gardeners who would consider a Pea required such generous treatment. If Mr. Findlay will try the variety in ordinary good garden soil, I shall be very interested to know the result. *Donald Allan.*

Schizostylis coccinea.—We were interested in the letter from Mr. Frederick Gooch which appeared in your issue of November 26, p. 431. From what Mr. Gooch states, it would appear that he experiences difficulty in growing Schizostylis coccinea owing to his ground being damp. This is interesting and quite contrary to our own experience, which is that this Schizostylis may be treated practically as a bog plant. We grow both Schizostylis coccinea and the pink variety, Mrs. Hegarty, in our Cornish nursery, in a meadow which lies in a valley and receives all the drainings from the hill above, and is bordered on one side by a stream. The soil is light, but of a black, boggish nature; it never dries out, and in the winter and during wet periods is frequently almost a marsh. The Schizostylis flourishes like a weed therein. At our Taplow nurseries, we always try to select a site slightly shaded, and plant the Schizostylis in a stiff soil, and in as damp a situation as we can find. Our experience, therefore, is that the Schizostylis is quite a moisture-loving plant, and we should have thought the condition Mr. Gooch writes of would have been quite ideal. We can confirm his experience of growing Schizostylis in pots, which we find most satisfactory. We have also found that buds picked from the open, even so late as the present time, may be well opened under glass with charming results. *Barr and Sons.*

Outdoor Oranges.—During the last week in November, I and our gardener gathered two hundred ripe Bitter Oranges and a few Citrons from our outdoor bushes. These fruits will be converted into marmalade and candied peel. Our bushes rarely have any shelter and then only against severe gales and the hailstorms which mark the fruit. I thought your readers might care to know what can be done in west Somerset. *G. Blathwayt, West Porlock House.*

Raising New Hydrangeas.—The article on "Raising New Varieties of Hydrangeas," by Mons. Cayeux, in your issue of December 3, is extremely interesting. The atmospheric conditions at Le Havre are naturally drier than in the British Isles, as I have noted here a tendency to mildew and damping unless the plants carrying seed pods are kept in an airy and dry position. For several seasons past I have seen various plants of Hydrangea Hortensis carrying many seed-pods as the result of self-fertilisation, and I often wonder why the idea of raising Hydrangeas from seeds was not thought of earlier. Varieties are becoming so numerous that we may yet have a National Hydrangea Society! *Geo. W. Stacey, Cedars Gardens, Chorleywood.*

Culinary Peas and Superphosphate.—Concerning Mr. Copley's reply re superphosphate and Peas, my warning was based on personal experience, not only on Peas alone but other seeds as well. I have even seen Potato sets rot when superphosphate was sown broadcast over the drills before the sets were covered in. I use superphosphate in conjunction with sulphate of potash on all indoor and outdoor crops, but am always careful not to allow the manure to come into direct contact with seeds or plants. There are several grades of superphosphate on the market, and possibly Mr. Copley's sample was a low grade one and not so potent. I thought a warning might save others from disappointment. Perhaps his seeds were so far apart that they did not come into direct contact with the manure! His information regarding the thin sowing of Peas is not exactly new to gardeners! *Grigor Roy, Stoke d'Abernon Manor Gardens.*

Hydrangea quercifolia and Gentiana Farreri.—I see that *A. G. F.*, in your issue of November 26 (page 425), states that Hydrangea quercifolia normally dies down to the ground every winter. At the Botanic Garden here there is a specimen over three feet high and considerably more in diameter, which has never yet had its sturdy stem cut by the frost. It has been out in the open for fully twenty years, and, having flowered well as usual, is not yet out of bloom (December 6). With reference to the notes on Gentiana Farreri in your recent issues I would like to mention that several friends and myself have found this gem easier to grow than G. sino-ornata. One plant I have of G. Farreri is a three-year-old from a cutting. Last year it had thirty flowers, and this year over seventy. It is growing in full sun, in a mixture—of no very great depth or area—of equal parts of sand and peat, in a moist and calcareous part of my rock garden. With G. sino-ornata, however, I have had no such good fortune, although it has been tried in similar and more substantial mixtures in various positions. *G. S. T., Cambridge.*

Bulbinella Hookerii.—I have read Mr. Arnott's description of Bulbinella Hookerii (page 422). He mentions two varieties of which I think the scarcer one, with the larger spikes, flowers and height, is the original Bulbinella Hookerii of Bentham and Hooker, while the commoner one, of which Mr. Arnott gives the description, is the variety angustifolia of Cockayne and Laing. This is smaller altogether than the type and with narrower leaves, broad at the base, deeply concave and never glaucous as in the type, which *may* have glaucous leaves. The racemes are both shorter and denser. The type and variety are common, I understand, in mountainous districts of the South Island. *Ronald Smith, Greenhead, Gargrave, near Skipton, Yorks.*

SOCIETIES.

ROYAL HORTICULTURAL.

December 13.—Cypripediums were the special feature of the last meeting of the year of this Society at Vincent Square, Westminster, on the above date. The special flower was exceedingly well represented as, indeed, were Orchids generally. The groups occupied a considerable proportion of the space allotted to floral exhibits, and they included many splendid plants. Amongst the general floral exhibits were an extensive collection of Chrysanthemums of the type best valued for market purposes, Carnations and hardy trees and shrubs. There were also many interesting exhibits of garden sundries, paintings of flowers and garden scenes.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Frederick J. Hanbury, Mr. S. W. Flory, Mr. A. Dye, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. W. H. Hatcher, Mr. John C. Cowan, Mr. Robert Paterson, Mr. A. McBean, Mr. T. Armstrong, Mr. H. S. Alexander, Mr. Richard G. Thwaites, Mr. Ernest R. Ashton, Mr. J. Wilson Potter, Mr. Fred K. Sander, Mr. C. J. Lucas and Mr. Clive Cookson.

First Class Certificates.

Cypripedium Windrush var. Memoria G. F. Moore (Radiosum × Memoria F. M. Ogilvie var. The King).—In this hybrid the central sepal is almost as large as the dorsal sepal, and each is broad and rounded, white, with heavy purple spottings and green base. The petals are very broad, the dorsal half dull purplish-brown, with green, spotted base, and the ventral half yellowish-green, with small purple spots. As seen from the front, the flower is almost circular in outline. Shown by Miss A. B. Moore (gr. Mr. Page), Chardwar, Bourton-on-the-Water.

Cypripedium H. T. Pitt (Archimedes × Beekmani × Christopher Grand Duke Nicholas).—This is of typical Chardwar form, the huge, rounded, dorsal sepal being white, with a central and basal area of green, spotted with purple; petals pale green, marked with purple-brown and widely extended. Lip pale green. Shown by Miss A. B. Moore.

Awards of Merit.

Cypripedium Westminster (Chloris × Alcibiades).—A neat and distinct hybrid in which the lip is very much shorter than usual and the dorsal sepal and petals are broad. The top and sides of the dorsal sepal are white, and the centre and lower part deep rose, with a rich brownish tinting. Petals and lip brown, with honey-yellow markings. Shown by Messrs. Black and Flory.

Laelio-Cattleya Hilary var. Majestica (L.-C. Soulange × C. Fabia).—A bold and handsome variety of clear, deep rose-purple colouring, with a ruby-purple lip edged with mauve and lined in the throat with gold. Shown by Messrs. Cowan and Co.

Odontonia Olga (Odontonia Thisbe × Odontoglossum crispum, Premier type).—A chaste flower, with pure white sepals and petals, the latter lightly fringed. The white, red-marked lip is like an enlarged and flattened O. crispum lip. Shown by Messrs. Charlesworth and Co.

Groups.

A marvellously fine group of superb Cypripediums, all grown splendidly, was shown by Miss A. B. Moore (gr. Mr. Page), Chardwar, Bourton-on-the-Water. The Chardwar hybrids are famous, and this was a magnificent presentation of them. For colour, size and form probably no finer collection has ever been exhibited. A few of the largest hybrids shown were C. Chardwar in variety, C. Gwen Hamner, C. Chrysostum var. Amy Moore, C. H. T. Pitt and C. Memoria H. J. Elwes. Some of the richer-coloured sorts were C. Memoria F. M. Ogilvie var. The Queen, purple, white, green, brown and honey yellow: C. Cappa Magna var. Fred Sander, C. Mecca (Cardinal Mercier × Price Albert var. Mecca), with finely-spotted dorsal sepal, and a band of honey-yellow around the brown petals; C. Monialis, C. Perseus and C. Prince Albert, Chardwar var. Other fine things were C. Boltonii represented by about half-a-dozen freely-flowered plants; C. Mildred, C. Seckon var. Gold Mohur, C. Bordubi var. Eau de Nil, wholly soft, greenish-yellow; C. Sir Trevor var. virginata, and C. The Prince.

A large group was arranged by Messrs. H. Alexander, Ltd., who used Oncidium varicosum Rogersii and Vanda coerulea among their Cypripediums. These last were well shown and included large and excellent plants of C. Ballet Girl, C. Roundhead, C. Corsair, Holford's var., C. Minotaur, C. Golden Fleece, Westonbirt var., C. Latona and C. Garibaldi. Coelogyne Mooreana was well represented, as also were Laelio-Cattleya Golden Beauty, of lovely colour, Cypripedium Boltoni, C. Actaeus Bianca, C. Nesta and C. Ilona, the last of pleasing soft yellow colour.

Mr. J. Evans, Colwyn Bay, showed a very pleasing group of well-grown Orchids wherein Vanda coerulea was used as a background for Calanthe Harrissii, Odontoglossum crispum, O. eximium, Brasso-Cattleya British Queen, Cypripedium insigne Sanderae, finely grown, C. Alcimeda, C. Alcibiades, C. Forest King and many other excellent Orchids.

Many interesting plants figured in the group shown by Sir Jeremiah Colman, Bart. (gr. Mr. J. Collier), Gatton Park, Reigate. There were big plants of Cypripedium King Emperor and C. Elatior, capital examples of Sophronitis grandiflora, Masdevallia tovarensis, Sophro-Laelio-Cattleya Isabella and Odontoglossum Monte Carlo. Species were represented by Zygopetalum rostratum, Cirrhopetalum refractum, Masdevallia Parkeri, Bulbophyllum fascinatum and a tiny, unnamed species of Oberonia.

E. R. Ashton, Esq., Broadlands, Camden Park, Tonbridge, showed several plants of Oncidium cheirophorum, all beautifully flowered, one carrying eleven spikes; Sophro-Cattleya Sir Mervyn Buller, Odontonia brugensis var. Distinction, Masdevallia tovarensis, freely-flowered (Cultural Certificate), and the beautiful, yellow Brasso-Cattleya The Baroness.

Cypripediums were extensively displayed by Messrs. Cowan and Co. against a background of Odontoglossums and Laelio-Cattleyas. A few outstanding Cypripediums were C. Regulus, C. Corsair, Holford's var., the dark-hued C. Perseus, C. Fantasia, C. Royal George, C. Niobe-Leeanum, very pretty; C. Golden Wren and C. Cyril Lea.

Messrs. Sanders' exhibit included a fine example of Cymbidium Edward Marshall, with a spike of eighteen big flowers; Laelio-Cattleya Yukon var. Golddigger, of lovely yellow, orange and brown colour; Vanda coerulea, Oncidium Mantinii—a showy natural hybrid, with golden and greenish-brown flowers; Cypripediums in great variety, Masdevallia tovarensis, Coelogyne Rhodeana, Lycaste Imschootiana var. bellissima, Odontoglossum cordatum and Laelia Gouldiana.

The Cypripediums from Messrs. J. Cypher and Sons were well-grown and included capital examples of C. Golden Queen, a very attractive Orchid; C. Thompsonii, a richly-coloured seedling from C. Piccaninny, C. Prince Albert, C. Corsair, C. Miriam, C. Alabaster, C. Lord Wolmer, C. Ballet Girl and C. Elatior, Shrubbery var., with deep, purple-brown colouring and a blush-white, heavily-spotted dorsal sepal.

Messrs. Charlesworth and Co. submitted a group in which Orchids of great variety were shown. Odontoglossums were well represented by O. crispum, O. c. xanthotes, O. Ophelia, O. Amethyst and O. Wilckeanum aureum, and Odontiodas by O. Acis and O. Marjorie. Miltonia Freya and M. Venus, Cypripedium Thalia and C. Maudiae magnificum, Masdevallia tovarensis, and Sophro-Laelio-Cattleya Flamingo were also shown by this firm.

Cypripediums were also displayed by Messrs. Armstrong and Brown, each plant standing free of its neighbour. C. Maudiae, C. Roger Sander, C. T. B. Armstrong, C. Lucifer, C. Alcibiades illustris, C. Lord Wolmer and C. Memoria F. M. Ogilvie var. The Premier, were a few outstanding kinds.

The group arranged by Messrs. J. and A. McBean was bright with Odontiodas and Odontoglossums, but included Cypripediums and a few other Orchids. Cattleya Etna, C. Venus, C. Luegae, Laelio-Cattleya Profusion, the richly-coloured L.-C. Linda, Cymbidium rosefieldiense and C. Doris made a brave show with the other kinds and varieties displayed.

Miltonia Sanderiana var. Redwing was conspicuous in a group composed chiefly of Cypripediums, from Messrs. Black and Flory. The more notable Cypripediums were C. Westminster, C. Golden Wren, C. Atlantis, C. Etta and C. Bisham.

Messrs. Stuart Low and Co. had a small group that included Oncidium Papilio, Sophro-Laelio-Cattleya Flammea with three handsome flowers, Laelio-Cattleya Nadina, L.-C. Schröderae in fine form, the rare Coelia Bauerii, Zygopetalum Mackayi and Sophro-Cattleya Enid. Messrs. Sutton Bros. showed a few Cypripediums, Cattleyas and Odontoglossums.

Mr. A. J. Keeling showed a group of Cypripediums, his C. Arachne var. Charm, C. Nesta II and C. Anita attracting attention; a flowering plant of Phaio-cymbidium chardwarensis was also included.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mr. Charles E. Pearson, Mrs. E. M. Wightman, Mr. William Howe, Mr. J. M. Bridgeford, Mr. E. R. Janes, Mr. R. Findlay, Mr. A. E. Vasey, Mr. W. B. Gingell, Mr. D. B. Crane, Mrs. Helen Lindsay Smith, Mr. G. W. Leak and Mr. W. D. Cartwright (Secretary).

Section B.—Mr. Gerald E. Loder (in the chair), Mr. Charles T. Musgrave, Mr. C. Williams, Mr. W. J. Bean, Mr. G. Reuthe, Mr. George Harrow, Mr. F. G. Preston, Mr. Arthur Bedford, Mr. E. H. Wilding, Mr. Mark Fenwick, Mr. Amos Perry, Mr. W. B. Cranfield, Mr. W. G. Baker, Mr. L. R. Russell and Mr. N. K. Gould (Secretary).

Award of Merit.

Aspidium (Polystichum) aculeatum var. angulare flabellipinnatum.—A well-grown specimen, bearing graceful, dark-green fronds, of this uncommon variety of the soft Shield Fern was shown. We understand that it was collected in Dorset. The variety differs chiefly from the type in its stiffish, fan-shaped pinnae. Shown by W. B. Cranfield, Esq., West Lodge, Enfield Chase.

Groups.

An extensive collection of Chrysanthemums of the best market type was displayed by Mr. A. G. Vinten. Yellow varieties of rich colouring were very prominent and the chief Japanese varieties were Golden Butterfly, of glowing golden colour; Golden Wonder, Yellow Favourite, Balcombe Beauty and Pioneer; while Golden Seal, amongst the Singles is another valuable yellow variety. Winter Cheer, a valuable late variety of rich rose-pink colour, and Mayfield Sunrise, its rosy-amaranth sport, were exceedingly beautiful sorts, while among other Japanese the Single varieties Mr. J. A. Barrell, rich chestnut, and Balcombe Gem, orange-buff, were greatly admired.

A neat little group, arranged by Messrs. L. R. Russell, Ltd., contained various foliage plants, winter-flowering Begonias, Aphelandra tetragona, Rhododendron Taylori and R. Indian Yellow.

Messrs. C. Engelmann, Ltd., set up an admirable collection of greenhouse Carnations in which the prominent varieties were Topsy, Red Laddie, Hebe, Rouge, Master Michael Stoop and Betty. Messrs. Allwood Bros. staged a few vases of perpetual-flowering varieties, with Oceanic, blush-pink, and Mermion, rich pink with white margins, of the perpetual-Malmaison type, and a good selection of Dianthus Allwoodii varieties. The last-named included Pat, rich rosy-cerise; Barbara, ruby-crimson, and Maud, salmon. Mr. J. J. Kettle had a good collection of Violets. Princess of Wales was the chief variety, and he also had bunches of Ascania, a dark blue single variety with a suggestion of reddish tinge, and Governor Herrick, a single Violet of smoky-blue colour.

A goodly collection of Conifers suitable for the rock garden was arranged by Messrs. W. Wood and Sons. These were chiefly species and varieties of Picea, Cupressus and Juniperus with an occasional specimen of Sciadopitys verticillata. The bronzy, winter colouring of Retinospora (Thuya) ericoides and Cryptomeria japonica elegans was very effective. At one end of the group there was a number of little plants of Skimmia Fortunei well-furnished with bright berries.

In his exhibit of dwarf Conifers and other hardy evergreens, Mr. F. G. Wood included a number of miniature gardens and a small collection of alpines. Miss Gladys Howes also showed miniature gardens, and the Misses Hopkins had a small rock garden, suitably planted. Mr. John Klinkert contributed a collection of topiary specimens in evergreen Box. Many forms and shapes were represented and all were well-grown.

By the Gallery, Messrs. Boulton and Paul erected one of their well-known little greenhouses, with garden frames. There were also shown an Atco Motor lawn-mower; the useful Shoulder Hoe; the Rolcut Secateurs; the Chase Continuous Cloche; plant tubs by Mr. A. J. Clarkson; vases and other garden ornaments in stone by Messrs. Sander and Co.; stone vases by the Empire Stone Co., Ltd.; "Gar-pa" stone paving, in red and grey; Jeyes' insecticides and disinfectants; the Mortegg Winter Wash, by Messrs. Murphy and Son, and the Briton-Ferry manures and insecticides.

Fruit Committee.

Present: Mr. Joseph Cheal (in the chair), Mr. H. S. Rivers, Mr. George F. Tinley, Mr. E. A. Laxton, Mr. P. A. Tucker, Mr. E. Neal, Mr. Edwin Beckett, Mr. George E. Woodward, Mr. W. H. Divers, Mr. A. W. Metcalfe, Mr. J. Wilson, and Mr. A. N. Rawes (Secretary).

Mr. A. Allardice, The Gardens, Burwarton Hall, Bridgenorth, sent the Apple Cardross Green (described in *Gard. Chron.*, November 12, p. 392), but the samples were rather mealy and seemed unlikely to justify the claim that they will "keep till June."

Samples of Apple Perkin's A.1. were sent to the Committee by F. Bostock, Esq., Pitsford House, Northampton, for comparison with Lane's Prince Albert. This variety appeared exactly similar, and the general opinion was that the two are synonymous.

Mr. P. C. M. Veitch sent samples of Cornish Aromatic Apple for comparison with another Apple which the Committee considered identical with it.

HARROGATE HORTICULTURAL.

A Chrysanthemum show, under the auspices of the Harrogate and District Horticultural Association, was held at the St. Peters School on Saturday, November 26. It was well attended and great interest was shown in the exhibits. The entries were good, both in the professional and amateur classes. The November Chrysanthemum shows used to be a popular feature at Harrogate, and gratitude is felt towards the Horticultural Association for reviving them.

The show was opened by the President, Alderman D. Simpson, J.P., who takes a great interest in the Society and in his remarks he stated that the Corporation was in a difficulty with regard to the Winter Gardens and the larger shows of the North of England Horticultural Society, which had been such a great success during the time they had been held at Harrogate. As a Corporation they desired to give support to any organisation which had for its objects the maintenance of high standards of horticultural and similar work. Whether it would be possible to make Harrogate a centre for functions of a character which were useful not only to the town but to the country as a whole was a question that might be considered.

Mr. A. Whitelock was awarded a Large Gold Medal for a fine group, and Large Silver Medals were awarded to Mr. Cardwell and Mr. R. Jones for their displays.

In several classes there were new varieties such as Yellow Majestic, Red Majestic, Thalia, Andania and Mrs. A. Holden, but the premier award went to a bloom of Mrs. B. Carpenter in Mr. R. Jones' stand. The principal prize-winners were Mr. R. Jones, Mr. H. Lunn, Mr. C. T. Hawkes, Mr. N. Dring, Mr. J. Bellerby and Mr. C. F. Spink. Mrs. Birkett and Mrs. Budd were successful in the decorative classes.

BRITISH CARNATION.

There is no doubt that an annual dinner offers a pleasant opportunity for a discussion which the more formal annual meeting does not permit, therefore the double functions of the above Society were held at Frascati's Restaurant on the 29th ult.

In recognition of twenty years' service as Show Superintendent, a presentation wallet of bank notes and an illuminated address and list of subscribers was made to Mr. E. F. Hawes. In making the presentation, Mr. H. T. Mason, the President of the Society, commented on the efficient way Mr. Hawes always managed the exhibitions, while another speaker referred to the fact that he had never known Mr. Hawes to become " rattled " in the face of difficulties—a further test of efficiency.

The guest of the evening was Lt.-Col. F. R. Durham, Secretary of the Royal Horticultural Society, who proposed the toast of the British Carnation Society, and gave a brief outline of the development of the Society's name flower since 1676. He made the important announcement that in future the R.H.S. intended to grant the use of its Hall to kindred societies for their shows, free of charge, a piece of information which was received with enthusiasm, for it was realised that the Council had shown a sympathy with the minor societies which had not been observed previously.

In response, the President, Mr. Mason, made a further announcement of interest, which was to the effect that at future shows the British Carnation Society had decided to take the Border Carnation under its wing, as it was thought that one society was sufficient to represent the Carnation in all its forms.

The Hon. Secretary announced that the Society was never in a better position; its membership is increasing, and two shows will be held next year, one in March and one in July.

IRIS.

The Annual General Meeting of this Society held at the Grosvenor Hotel, London, on November 30, was preceded by a dinner, in which about thirty members participated.

After the election of several new members, the Hon. Secretary, Mr. G. N. Bunyard, presented the Annual Report, which showed that considerable progress had been made during the year, a large number of new members had been added to the roll, and enthusiasm for the objects of the Society was decidedly increasing. The show organised and held in June last was in every way an unqualified success. During the year, the Society had instituted two Memorial Medals, one in memory of Sir Michael Foster, the other to commemorate the work of Mr. W. R. Dykes. An Iris Society's Medal had also been struck, and the thanks of the Society were due to Mr. Dillistone for preparing the designs for this and the Foster Plaque, and superintending the execution of the dies for these and the Dykes' Medal, which was based on a suggestion made in a drawing submitted by Mrs. W. R. Dykes. The membership of the Society was now more than six times its original foundation, and more members were constantly joining from all parts of the world. The Iris trial garden was now an accomplished fact, and much useful information was being compiled which would be published in due course.

Much as he regretted it, Mr. Bunyard stated that he was compelled, owing to the pressure of business, to relinquish the position of Secretary that he had held since the foundation of the Society. He felt he could do this the more comfortably as the Society's future was assured.

Mr. R. Wallace, in moving the adoption of the Report, said there was not the slightest doubt to whom the success of the Iris Show was due, and, indeed, to whom much of the success of the Society generally could be attributed, and that was to Mr. Bunyard. He possessed an organising capacity that had proved very valuable, and he was glad that although they were losing Mr. Bunyard as a Secretary, he had consented to be nominated for the Committee, where the Society would still be able to make use of his services.

The Hon. Treasurer reported a cash balance in hand of nearly £50. This, in consideration of the very expensive year, was quite satisfactory, as the cost of the show and medals was heavy. So far as the medal fund was concerned, the subscriptions just about covered the cost of the dies, and the production of medals for this year, and also left a number of medals in hand that would be available for several years. Therefore, the demand on the Society's funds in this respect for the next year or two would be comparatively small. In view of the changes necessary, due to the retirement of Mr. Bunyard, he was relinquishing the position of President and Treasurer, and was gratified that he could hand over to his successor so satisfactory a balance.

Arising out of the report, it was decided to appoint an Hon. Auditor, and in future to publish a balance sheet in the *Bulletin*.

It was also decided that the word " November " should be substituted for " June " in Rule 11, and that the financial year should end on October 31, therefore future annual meetings will take place in November.

The Secretary's and Treasurer's reports were then adopted.

The meeting then proceeded to elect the officers for the year, as follow :—President, Sir Wm. Lawrence, Bt.; Secretary, Mr. G. L. Pilkington; Treasurer, Major George Churcher; Editor, Mr. George Dillistone; Auditor, Mr. L. Caldicott. The vacancies on the Committee were filled by Messrs. G. N. Bunyard and B. R. Long.

After the general business, Mr. George Dillistone opened a discussion on " Iris Nomenclature."

NATIONAL CHRYSANTHEMUM.

Only two novelties came before the meeting of this Society's Floral Committee, held at the R.H.S. Hall, on December 12.

First Class Certificates.

Winsome. V.1.a.—A large-flowered Single Chrysanthemum with two rows of broad florets. The colour is deep rose-pink, with a small white zone round the dark yellow eye. Shown by Mr. H. Shoesmith, Junr., Mayford.

Yellow Star. II.1.c.—A small flower of Japanese type, but produced freely in sprays on long, stiff stems. The colour is pale yellow. This should prove a useful " spray " Chrysanthemum for late market and garden use. In general form, the flowers resemble those of Winter Cheer. Shown by Mr. P. Hulse, Shoreham Place Gardens, Shoreham, Kent.

SALISBURY GARDENERS'.

At the fortnightly meeting of this Society, held at the White Hart Hotel, on Wednesday, December 7, Mr. S. W. Tucker presided over a large attendance, which included several visitors from the Romsey Gardeners' Society.

The lecturer for the evening was the Rev. D. F. Wright, a delegate from the Romsey Gardeners' Society, who discussed " The Herbaceous Border " in a most delightful manner. There was considerable discussion, and many questions were dealt with. The lecturer was heartily thanked, on the proposition of Mr. A. J. Hooper, seconded by Mr. G. Reid, to which he suitably responded.

Mr. Frampton, Secretary of the Romsey Society, expressed the thanks and pleasure of the visitors, and said he hoped that members of the Salisbury Society would return the visit as inter-society meetings were very valuable as a means of education and social intercourse.

Very fine exhibits of winter-flowering Begonias were staged by Mr. A. J. Hooper and Mr. H. F. Strong, for which they were thanked and awarded the Society's Certificate of Merit.

Obituary.

Joseph Biggar.—The death occurred with tragic suddenness on Wednesday, December 7, of Mr. Joseph Biggar who had been associated with the Glasgow fruit trade for over forty years. He had gone on a visit to Edinburgh, and on his arrival he collapsed and died on the station platform. Deceased, who was in the employ of Messrs. McCraig, Gilchrist and Co., was for a number of years resident in America, where he represented several Glasgow firms engaged in the Apple trade, and when Sir Malcolm Campbell began a fruit-farming enterprise in California, some twenty years ago, Mr. Biggar was entrusted with its management.

ANSWERS TO CORRESPONDENTS.

Material for Drives.—*A. F.* Unless you can overcome the prejudice to the use of tar-macadam or tar-slag, we fear you will have difficulty in finding a really suitable material with which to construct a drive capable of carrying heavy motor traffic. Concrete roads covered with a thin layer of rock asphalt are at present in much favour with engineers, but unless the traffic at your establishment is abnormally heavy, concrete would be too expensive for the purpose. We suggest that a drive surfaced with a good thickness of tar-slag would meet your requirements admirably, in so far as wear and tear are concerned. The objection to the colour of this material might be minimised by tar-spraying the surface of the drive after it has become thoroughly consolidated, and then spreading over it a thin layer of red shale or of three-eighths-of-an-inch limestone chippings. If this topping is well rolled into the tar matrix by means of a steam or petrol roller the road will retain the colour of the surfacing material—red in the case of shale, white if Buxton limestone gravel is used.

Names of Fruits.—*X. Y. Z.* Pear, decayed; 1, Shepherd's Fame; 2, Cox's Pomona; 3, Beauty of Waltham; 4, King of the Pippins; 5, Allington Pippin; 6, not recognised; probably a local variety.—*H. N.* 1, Adams's Pearmain; 2, Belle de Boskoop; 3, King's Acre Pippin; 4, Court Pendu Plat; 5, Sturmer Pippin.

Peach Border and Peach Case.—*J. B.* Your natural gravel subsoil should be quite satisfactory with broken bricks and mortar rubble placed upon it. If you are in any doubt, put in a drain running parallel with the house. You need about nine inches of artificial drainage, with the smaller rubble on the top to prevent the compost from being carried down when the fibre of the turf has decayed. Allow a clear two feet of depth for the compost, and about four feet in width for young trees direct from the nursery, with a little extra width for prepared, home-grown trees. Peaches succeed best in a rather strong, calcareous soil, cut when dry, two to four inches in thickness, carted home and thrown into a heap until wanted for use. If time admits, chop the material roughly, throw it up in ridges, and leave it to sweeten. The corrective agents may consist of old lime and brick rubble, burnt earth, and road scrapings. To every four loads of loam add one load of these materials, thoroughly mixing all together and keeping the compost dry. Place the turves, grass-side downwards, over the drainage, and build up the retaining walls with turves as the border is made, and make all thoroughly firm. The compost suggested will be rich enough without the addition of manures, and will not force a stronger growth than is desirable; a bushel of crushed bones or bone-meal and a peck or two of soot may be added to every load of the compost in the case of lighter and poorer soils.

Communications Received.—W. A. B.—A. A. H.—W. C. M.—F. B.—A. A.—J. P. S.—W. B.—A. B.—R. R. H. M.—G. C. G.—T. P.—F. G.

MARKETS.

COVENT GARDEN, Tuesday, December 13th, 1927.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.... ...	30 0–40 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's per doz.—	
pink... ...	18 0–21 0
—yellow ...	12 0–18 0
—bronze ...	15 0–18 0
—white ...	12 0–18 0
—red	15 0–18 0

	s. d. s. d.
Crotons, doz. ...	30 0–45 0
Cyrtomiums ...	10 0–25 0
Erica gracilis, 48's, per doz.	24 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz. ...	8 0—9 0
—hyemalis, 48's, per doz. ...	18 0–36 0
—nivalis, 48's, per doz. ...	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety ...	12 0—8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	15 0–18 0
—60's, per doz.	8 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0–12 0
—cuneatum, per doz. bun. ...	8 0—9 0
Anemones, St. Brigid, per doz. bun. ...	6 0—8 0
Arums (Richardia), per doz. blooms ...	6 0—8 0
Asparagus plumosus per bun. long trails, ...	2 6—3 6
—med. sprays	2 6—3 0
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0 2 6
med, „ ...	1 0—1 6
short, „ ...	0 6—1 9
Camellias, white, 12's, 18's per box. ...	2 6—3 0
Carnations, per doz. blooms .	4 0—6 0
Chrysanthemums, per doz. blooms—	
—white ...	4 0—8 0
—yellow ...	4 0—6 0
—pink... ...	4 0—6 0
—bronze ...	4 0—6 0
—red	4 0—6 0
—single varieties	2 6—4 0
—spray, bronze, per doz. bun.	18 0–24 0
—spray, pink, per doz. bun.	18 0–24 0
—spray, yellow, per doz. bun.	24 0–30 0
—spray, white, per doz. bun.	18 0–30 0
—single varieties, spray, per doz. bun.... ...	18 0–30 0
Croton leaves, per doz. ...	1 9—2 6
Daffodils, Single, per doz. bun.	— 48 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	10 0–12 0
Freesia, white, per doz. bun.	5 0—6 0
French flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	3 6—4 0
—Violets, Parma, large, per bun..	6 0—8 0
—Ruscus, green, per pad ...	5 0—6 0
—Solanum fruits, per pad ...	8 0–10 0
—Anemones, mixed, per doz. bun.	12 0–15 0

	s. d. s. d.
French flowers—	
—Ranunculus, carmine, per doz. bun.	6 0—7 0
— — Burbaroux, per doz. bun.	6 0—7 0
— — Romano, per doz. bun.	12 0–15 0
—Roses, Saffrano, per pkt. ...	2 3—2 6
—Marguerite, yellow, per doz. bun. ...	2 6—3 0
—Violets, single, per doz. bun.	2 0—3 0
Gardenias, per doz. blooms .	8 0—9 0
Heather, white, per doz. bun.	— 12 0
Hyacinths, Roman, 6's, per doz. bun.	2 0—2 6
—on Bulbs, per doz. bun. ...	5 0—6 0
Lilac, white, per doz. sprays...	5 0—7 0
Lilium auratum, per doz. blooms	9 0–10 0
—speciosum album, per bun.	4 6—5 0
—short, per doz.	4 6—5 0
—rubrum, long, per bun ...	4 6—5 0
—short, per doz.	2 0—2 3
—longiflorum, long, per bun.	3 6—4 0
—short, per doz. blooms ...	— 3 6
Lily-of-the-Valley, per doz. bun.	24 0–30 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Narcissus Soleil d'Or, per doz. bun.	12 0–15 0
—Paper White, per doz. bun.	10 0–12 0
Orchids, per doz.	
—Cattleyas ...	21 0–30 0
—Cypripediums	4 0—6 0
Poinsettias, per doz. blooms...	18 0–30 0
Roses, per doz. blooms—	
—Columbia ...	9 0–10 0
—Richmond ...	8 0–10 0
—Madame Butterfly ...	9 0–12 0
—Golden Ophelia	8 0—9 0
—Roselandia ...	8 0—9 0
—Madame Abel Chatenay ...	4 0—5 0
—Liberty ...	8 0—9 0
Smilax, per doz. trails ...	3 0—4 0
Tulips, scarlet and white, per doz. bun. ...	4 6—5 0
Violets, per doz. bun.... ...	3 0—6 0

Remarks.—Business conditions have shown a slight improvement during the past week, but owing to the increased supplies of Chrysanthemums fairly large quantities, especially of large blooms, have been left over each morning, while only the best marks in bunch stuff have realised anything like the price expected in December. Spray varieties now consist of Allman's Yellow, Baldock Crimson, Chesthunt White, Heston White, Tuxedo, Negoya, Winter Cheer, Market Red and Bronze and Yellow Wilcox. Single varieties are now very moderate in quality and show signs of finishing for this season. Carnations increased towards the week-end, but they are not likely to become cheaper this side of Christmas. Roses are gradually declining in quantity and prices are on the up grade; the best sorts fromhome growers being Madame Butterfly, Golden Ophelia, Roselandia, Columbia, Richmond and Sylvia. Daffodils have already made their appearance, a few odd bunches being on sale last week. Tulips, on bulbs, are increasing in quantity and are chiefly scarlet and yellow sorts. Roman Hyacinths, cut and on bulbs, are now much better in quality; coloured Hyacinths are also offered in limited quantity. A few boxes of yellow and white Narcissi, from home growers, have been on sale during the past week.

French Flowers.—Paper White Narcissus has improved in quality during the past few days, and so also have single Violets. Supplies are now on the increase from France, the latest arrivals being Ulrich Brunner Roses in excellent condition, and Frau Karl Druschki—not so fine at present, but a welcome addition owing to the very small supply from home-growers. All Anemones and Ranunculuses are gradually improving in quality, as are yellow Marguerites and Mimosa (Acacia). Owing to the unfavourable weather conditions across the water only small quantities of flowers have arrived in a really good condition this season.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Newton Wonder	4 0—7 0
—Lane's Prince Albert ...	4 0—7 0
—Bramley's Seedling ...	4 0—9 0
—Other cookers	3 0—5 0
—King's ...	3 0—5 0
—Cox's Orange Pippin, per case	20 0–35 0
½-sieve ...	6 0–15 0
—Blenheim Pippin, ½-sieve...	3 0—5 0
Apples, American—	
—Newtowns ...	12 0–18 0
—Red Pearmain	9 0—9 6
—York Imperials, per barrel ...	28 0–32 6
—King David, per case ...	12 0–13 0
—Winter Banana ...	13 0–14 0
—Jonathan ...	10 6–16 0
—Oregon, Newtown Pippin	16 0–18 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½-barrel ...	26 0–30 0
—Ribston Pippin, per barrel ...	18 0–24 0
—Wellington ...	22 0–26 0
—Russet ...	28 0–32 0
—Blenheim Pippin, per barrel	20 0–26 0
—British Columbian Jonathan	13 0–14 0

	s. d. s. d.
Bananas ...	18 0–25 0
Grape Fruit—	
—Blue Goose...	25 0–27 6
—Dominica ...	— 25 0
—Jamaica ...	24 0–25 0
Grapes, English	
—Alicante ...	1 6—3 0
—Colmar ...	1 6—3 6
—Muscat ...	5 0—9 0
—Canon Hall ...	6 0—8 0
Lemons, Messina, per case ...	25 0–30 0
—boxes ...	10 6–14 0
Nuts—	
—Cobs ...	1 6—1 8
—Walnuts, Grenoble, per bag	8 0—9 0
—Chestnuts, Italian, bag .	20 0–27 6
Oranges, per case—	
—Valencias (Spanish)	12 0–35 0
——(Australian)	12 0–15 0
—Jaffa	14 0–16 0
—Tangerines ...	1 0—1 7
Peaches, South African, tray	6 0–25 0
Pears—	
—Doyenné du Comice, per doz.... ...	2 0—6 0
—Californian—	
—Doyenné du Comice, case	27 0–28 0
—½-case ...	— 17 0
—Winter Nelis, per case ...	24 0–28 0
—Beurré D'Anjou	24 0–26 0
Pines, case ...	25 0–36 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon ...	8 0–10 0
—Italian ...	4 6—5 0
—Paris Green...	7 0—9 0
—Sprue ...	— 1 6
Beans, Madeira, per box ...	3 0—8 0
— Guernsey, per lb., finest	2 0—5 0
—Ordinary ...	1 6—2 6
Beets	4 0—6 0
Brussels Sprouts, ½-bag ...	2 6—3 6
Carrots, per bag	4 0—5 0
Cauliflower, per crate ...	5 0—8 0
Celery (washed), per doz. fans	18 0–30 0
Cucumbers, doz.	18 0–21 0
French Endive, per doz. ...	3 0—4 0
—Batavia, per doz.	2 6—3 0
Leeks, per doz.	2 0—3 0
Lettuce, English, per doz. ...	1 0—2 0
—French, round, per doz. ...	2 0—3 0

	s. d. s. d.
Mint, forced, per doz. bun.	4 0—8 0
Mushrooms—	
—Cups ...	2 0—3 0
—Broilers ...	1 6—2 0
Onions—	
—Dutch ...	7 6—8 6
—Spanish ...	10 0–14 0
Parsnips, cwt. .	4 0—5 0
Peas, Guernsey, per lb. ...	2 0—5 0
Potatos—	
—English, cwt.	5 0—8 0
—Guernsey, new, per lb. ...	6 0—7 0
—Azores, case	12 0–20 0
Tomatos, English—New Crop—	
—pink... ...	6 0—8 0
—pink and white	6 0—8 0
—white ...	3 0—6 0
Tomatos, Canary Islands ...	12 0–15 0
Turnips, per cwt.	3 6—4 0

Remarks.—There has been some slight improvement in many sections of the fruit market, conditions generally being more lively. Apples from the United States and Canada, although not plentiful, have increased in price, and there is a firmer demand for first-grade English Bralmey's Seedling and good Cox's Orange Pippin. There is a keener inquiry for Oranges and this is reflected in the higher prices now ruling. Hothouse Grapes continue in good demand and price levels are better. Some excellent Pears from California are offered, as well as a few from the Worthing district. French Beans from Guernsey are scarce and costly, in spite of heavy arrivals of Beans from Madeira. Hothouse new Potatos are an improved trade, in addition to which there are supplies from the Azores and Scilly Isles. Tomatos from the Canary Islands are plentiful and will be offered comparatively cheaply this week. Some really good new crop English Tomatos have been sold at firm prices. Mushrooms remain in steady request with little or no fluctuation in selling values. Salads are moving out with more freedom, supplies being rather smaller. Cauliflowers from the West of England and Northern France are selling very much better and green vegetables generally meet an improved demand. Old Potatos are selling fairly well with a satisfactory demand for the best class of tubers.

GLASGOW.

Prices of Chrysanthemums continue to favour the interests of the growers, and there is little prospect of reaction before the New Year. Several popular varieties, such as Almirante, Jean Pattison, Thorpe, Sandown Radiance, etc., are finished for the season, and although they have been succeeded by Winter Cheer, Baldock's Crimson and other December-flowering sorts, the daily supplies are not so plentiful as they were, and special quality blooms were particularly short in the Glasgow market during the past week. Messrs. Carnegie, Belmont Nursery, Ayr, received the top price of 3s. 9d. for 6's of Wm. Duckham, on Monday, and the average prices over the week were as follow:—W. Duckham, 2s. 6d. to 3s. 6d.; Phyllis Cooper and Mary Morris, special, 2s. 6d. to 3s.; ordinary, 1s. 3d. to 1s. 6d.; Ada Brooker, Framfield Pink, Winter Cheer and Red Lincoln, 2s. to 2s. 6d.; Favourite, 2s. to 2s. 3d.; Exmouth Crimson, 1s. 9d. to 2s. 3d.; Wilcox and Florrie King, special, 1s. 6d. to 1s. 9d.; ordinary, 1s. to 1s. 6d.; Pink and Bronze Pagram, 1s. to 1s. 3d.; Pink Triumph, 8d. to 1s.; Thorpe and Baldock's Crimson, 6d. to 1s. per bunch; Heston White, large, 6d. to 9d.; small, 3d. to 6d.; and Balcombe Beauty, 2s. to 3s. 6d. per dozen. Roses were dear again, pink varieties at 6s. to 8s. per dozen; red, 3s. to 4s.; Carnations, were steady at 4s. to 4s. 6d. and Narcissi, 4s.; Lilium longiflorum, 3s. to 3s. 6d. per bunch; Asparagus, large, 1s. 6d. to 2s.; small, 1s. to 1s. 6d. First consignments of Tulips and Ferns in pots experienced a slow sale at 1s. 6d. to 1s. 9d. each. The blooms appeared to have been subjected to excessive forcing.

THE WEATHER IN NOVEMBER.

The month opened abnormally warm and wet, with rather stormy southerly to westerly winds—a continuation of those experienced in October. This was terminated by numerous hail showers on the 5th to 6th, and the temperature then became considerably lower. The remainder of the month was mainly noteworthy for exceptional spells of northerly and easterly winds. The mean temperature of the entire thirty days was 43·0°, or 0·6° above the average. Of bright sunshine, 65½ hours were recorded, or nine more than the normal number. Rain, however, fell on 19 days, or two more than the average, and the total amount was 4·28 inches, implying an excess of 1·21 inches. The subsoil water stood at a high level. Wind movement, after the first few days, was generally small, and only one very moderate gale was experienced. Haze and mist were of frequent occurrence, and fairly thick fog prevailed during portions of the 27th and 28th. There was no snow, and no special amount of frost. *Joseph Baxendell, The Fernley Observatory, Southport.*

GARDENING APPOINTMENTS.

Mr. John Lingwood, for the past eighteen months gardener to Lord Fitzalan, of Derwent, Cumberland Lodge, Windsor, and previously for twenty-five years gardener to the late W. G. Rigden, Esq., Queenswood, Englefield Green, Surrey, as gardener to Miss Macnoghton, East Burnham Park, Farnham Royal, Buckinghamshire.

Mr. D. Boughtwood, as gardener to F. A. Morris, Esq., Bircher Hall, near Leominster, Herefordshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. T. E. Minnikin, for the past two years and nine months foreman at Newton Hall Garden, Stocksfield-on-Tyne, as gardener to J. E. Deuchan, Esq., Greycourt, Riding Mill, Northumberland. (Thanks for 2/- for R.G.O.F. Box. — Eds.)

CATALOGUES RECEIVED.

Seeds.

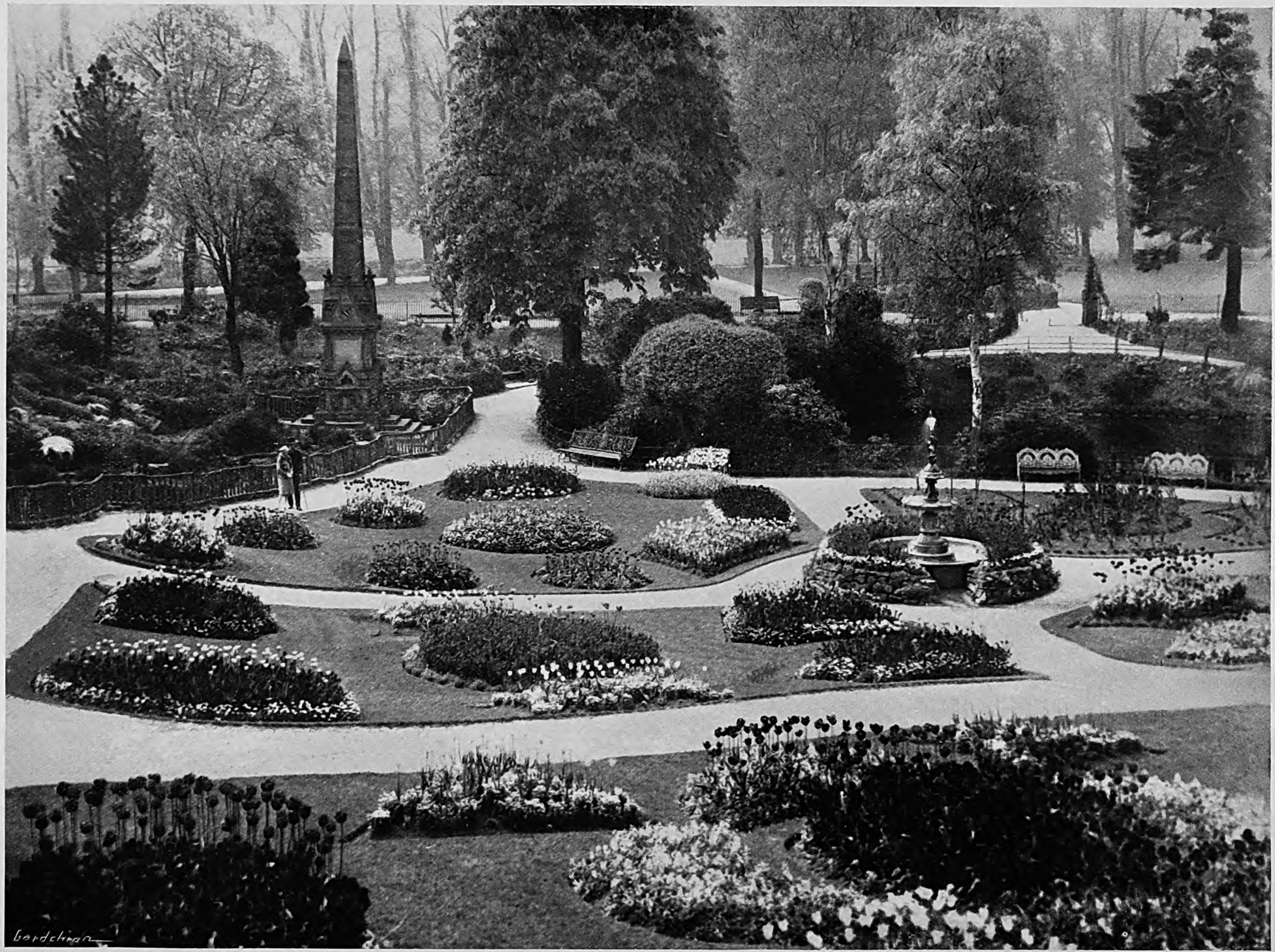
Dickson and Robinson, Cathedral Street, Manchester.
James Carter and Co., Raynes Park, S.W.20.
Dicksons Seeds, Ltd., Chester.
Sutton and Sons, Reading.
McHattie and Co., Chester.

Bulbs.

Barr and Sons, 11, King Street, Covent Garden, W.C.2.

Foreign.

Ernst Benary, Erfurt, Germany.—Seeds.
Robert Blossfeld, Potsdam, Germany.—Seeds.
Vilmorin-Andrieux et Cie, 4, Quai de la Mégisserie Paris.—Plants; seeds.



THE DINGLE, QUARRY PARK, SHREWSBURY.

THE
Gardeners' Chronicle

No. 2139.—*SATURDAY, DECEMBER* 24, 1927

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Supplement Plate.

The Dingle, Quarry Park, Shrewsbury.

Average Mean Temperature for the ensuing week deduced from observations during the past fifty years at Greenwich, 38.9.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 21, 10 a.m. Bar. 29.6. Temp. 39°. Weather, Wet.

Rothamsted Field Experiments
I.

The Field Experiments carried out at Rothamsted during 1925-26, an account of which is published by the Ministry of Agriculture,[*] help materially to advance knowledge of the modes of response of plants to fertilisers of different kinds. The chief problem which these experiments were designed to elucidate is why fertilisers of one kind or another act better in some seasons than in others. The fact that they do so is admitted and is illustrated by the Rothamsted results. For instance, the increase in hundredweights in yield of Potatos per hundredweight of fertiliser was found to range widely. With a nitrogenous fertiliser, sulphate of ammonia, it varied from twenty hundredweights in 1922 to twenty-five hundredweights in 1926. With sulphate of potash, without the addition of farmyard manure, the range of yield was extraordinarily wide—from fifty-eight hundredweights in 1922 to ten hundredweights in 1924. When farmyard manure was used as well as sulphate of potash the capriciousness of reaction of the plant was no less, and indeed still more evident. An increase of twenty hundredweights was obtained in 1922, and no increase at all in 1924. Phosphatic fertilisers, as experiments on Swedes show, behave in like manner. A dressing of 600 lbs. of superphosphate gave an increase of 140 hundredweights in 1920, and a mere eighteen hundredweights in 1922. The valuable part of these investigations lies in the fact that they demonstrate the possibility of correlating the effects of fertilisers with the behaviour of the clerk of the weather. Phosphate and potash act best in a bad season. In the bad seasons 1913 and 1920, sulphate of ammonia, together with sulphate of potash, doubled the yield in the former year and trebled it in the latter; these increases, of course, representing the yield from the manured plots as compared with those from control plots with no artificials. On the other hand, an application of phosphatic fertiliser to the plots which in seasons of good weather (1922 and 1924) received sulphate of ammonia and sulphate of potash, produced a yet larger increase. The increases obtained by the use of nitrogenous and potassic fertilisers were far smaller—a matter of only two or three hundredweights; nor did the addition of phosphates make any considerable difference to the yield. It looks as though a new fertiliser maxim formulates itself from these results: "Take care of the bad and the good years will take care of themselves." There is, however, another aspect to be borne in mind. Crop and stock are continually removing the essential mineral substances, and particularly phosphates and potash, from the land. Therefore, if soil fertility is to be maintained these materials must be restored to the land from time to time. No less important is the conclusion to which the Rothamsted experiments point, that nitrogenous fertilisers may be relied upon to increase crop development in almost any season, whereas phosphates and potash, though they may not act in a good season will act energetically in a bad one. It would follow, as indeed Rothamsted experiments on Potatos show, that the best result is obtained from fertilisers when they are given a complete manure, that is, one containing nitrogen, potash and phosphates. The fact is that fertilisers of one or other of these three kinds are complementary to one another. This is strikingly shown in one of the experiments with Potatos. Sulphate of ammonia alone had little effect, but with the addition of sulphate of potash it brought about yields which rose with each additional quantity of sulphate of ammonia. The first hundredweight of the two fertilisers gave an extra ton of Potatos; the second hundredweight of each of the two fertilisers gave a further increase of one-and-a-half ton, and two more hundredweights of sulphate of ammonia gave again an increase of up to two tons, provided that the sulphate of potash was increased proportionately. Thus in 1926:—

Sulph. of Ammonia	0	1	2	4	cwts.	per acre
0 cwt. Sulph. of Potash	7·8	7·7	9·4	9·5	tons	,,
1 ,, ,, ,,	7·8	9·0	10·6	11·2	,,	,,
2 ,, ,, ,,	8·0	9·2	10·8	11·6	,,	,,
4 ,, ,, ,,	7·8	9·1	10·4	12·3	,,	,,

Up to the point which the experiment reached, the largest quantity of properly proportioned fertiliser gave the largest increase of crop. Needless to say, however, this would not go on indefinitely, and therefore the problem for the grower is to discover where the limit of profitable increase comes.

Help for the Gardeners' Royal Benevolent Institution.—A highly successful whist drive and dance, organised by Mr. Charles H. Cook and the staff of the Royal Gardens, Windsor, in aid of the Gardeners' Royal Benevolent Institution, was held in the Guildhall, Windsor, on December 8. Thirty-four tables were occupied by whist players, while, at the same time, about eighty couples danced in the historic Council Chamber to music provided by an excellent local band. The Mayor, Sir William Carter, J.P., and two Town Councillors, paid a visit to the party during the evening. At the distribution of prizes, Mr. Cook thanked those present and the donors of the prizes for their help. At the close of the evening a member present explained the work of the Institution, and thanked Mrs. Cook and her band of helpers who provided and served refreshments to the company—which added greatly to the enjoyment of all. As a result of this effort, the Gardeners' Royal Benevolent Institution will benefit to the extent of about £40.

Water-colour Sketches at Kew.—The artistic attractions of the Royal Botanic Gardens, Kew, have been enriched by a number of water-colour sketches which were made towards the end of the nineteenth century by the late Mrs. Emma Hubbard. As the Kew *Bulletin* (No. 10, 1927) records, Mrs. Hubbard, at that time, lived at Kew, and the paintings are faithful representations of trees, flowers and garden scenes of the period. Mrs. Hubbard's son, Mr. George Hubbard, has loaned the thirty-seven pictures to Kew, and they are hung on the first floor of Kew Palace, where lovers of Kew may see them and, mentally, note the change time has made in the appearance of various specimen trees, several lake and woodland scenes, and the Bluebells in the Queen's Cottage grounds. The collection also includes a painting of the Seven Sisters Elms, the last of which was blown down nearly twelve years ago. Of very special interest to many, and especially to numbers of Old Kewites, is the painting of the old Kew Bridge which spanned the Thames for over a hundred years, and was demolished in 1899.

Chrysanthemums at Lyons.—The autumn show which took place at Lyons during November, although not solely composed of Chrysanthemums, was naturally dominated by that flower, the exhibits of which were fine enough and numerous enough to have constituted, alone, a very attractive show. The Paris firm of Vilmorin-Andrieux sent an exhibit as fine as any they are accustomed to stage in the capital, and that is saying a great deal; their exhibit was very varied, including plants trained in the Japanese style, in pyramid form, etc. Among especially fine varieties were Blanche Delclocque, Orleanais, Picard, and a very fine specimen of Cendrillon. Their group as a whole presented a striking effect, especially when viewed from the gallery above the hall. Near by, M. Guillot, of St. Marcellin, had a very handsome group, among which the variety Chrysanthémiste Lochot was especially noticeable. M. Martin, the well-known nurseryman of Digoin, showed Single Chrysanthemums in a very pleasing style; the soft, delicate tints and graceful groupings were a delight to the eye. Among others used to produce this pretty effect were Etoile du Nord, Leucanthemum, Madame Franchisseur and M. Malatier. M. Cornette, of Cognac, exhibited a fine new variety of his own raising, La Cagouille, an Incurved sort, of pink-lilac hue; and M. Morin, of La Rochelle, brought his remarkable decorative varieties which are always so much admired. The Léonard-Lille Nurseries, of Villeurbanne, filled a large hall with a model garden, in which the beds were chiefly furnished with Chrysanthemums. A fountain, ornamented with statues, was illuminated, night and day, and presented a very beautiful effect, besides throwing into prominence the groups of huge specimen plants, about a hundred in number, including Edith Cavell, Ville de Paris and Ami Ph. Rivoire. M. Leloup-Grimoux, whose exhibit at the Paris exhibition won him a number of awards, including the Gold Medal of *The Gardeners' Chronicle*, showed some remarkable new varieties, and also those of the previous year, including Commissaire Général Decault, Ami L. Ragot, and Com. J. Ragot. The modern garden staged by the well-known firm of Rivoire, pére et fils, of Lyons, which occupied the whole of one end of the "covered way," was almost exclusively planted with Chrysanthemums. The design, which was of great originality, reflected considerable credit on the architect. The paved walks, with flowers growing in the interstices of the stones, the colonnade, the pergola, and the beds glowing with the rich colours of the Chrysanthemums, made a picture of real beauty, attained at a cost in labour, time, and inventive ingenuity, which only those who have such tasks to perform can possibly realise.

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[*] *Journal* of the Ministry of Agriculture. Vol. XXXIV. No. 7. October, 1927.

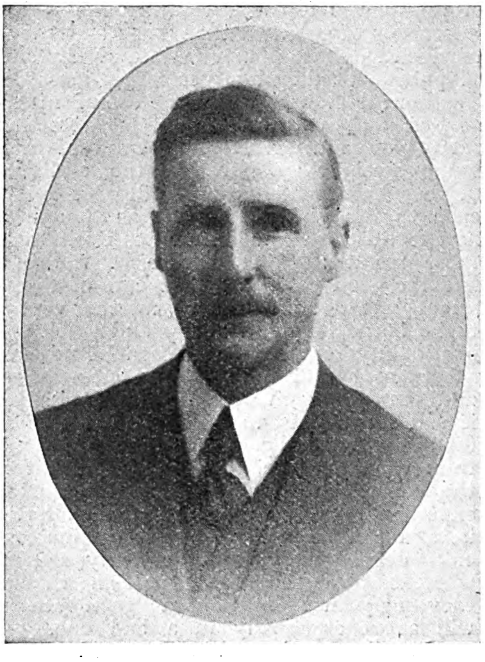
"The Garden."—It was with regret we learned that *The Garden* ceased publication with its issue for December 17. Under the guidance of its founder, Mr. William Robinson, *The Garden* enjoyed a long and useful career, and its usefulness was continued under the editorship of the late Mr. E. T. Cook, the late Mr. W. Harvey, Mr. H. Cowley and Mr. E. Cox respectively, and, latterly, by Mr. G. M. Taylor. This is the third of our contemporaries to cease publication since the first few years of the war.

Mr. John T. Jeffrey.—The Superintendent of the public parks at Edinburgh has been nominated President of the Royal Caledonian Horticultural Society, in succession to Mr. W. J. Thomson, who has held the office for two years, and retires at the end of December. This distinctive honour is well deserved, as Mr. Jeffrey has taken an active personal interest in the affairs of the Society and the exhibits arranged by the Parks Department have become an attractive feature of the monthly meetings.

The Dingle, Quarry Park, Shrewsbury.—Our Supplement Plate depicts the well-known "Dingle" in the Quarry Park, Shrewsbury, in its spring dress. Upwards of 12,000 Tulips were planted to produce this spring display, and the bulbs were supplied by Messrs. John Peed and Son, who kindly lent us the photograph from which our reproduction was made. The varieties were Pride of Haarlem, Erguste, McKinley, Rev. H. Ewbank, Viola, Valentine, Clara Butt, Negro, Moonlight, Fire Dragon, Louis XIV, Flamed Crown, Orange King, Royal Crown, Grenadier, Snowdon, Miss Jekyll, Glare of the Garden, Bronze Queen, Dom Pedro, Inglescombe Pink, Scarlet Emperor, and Old Times. Eight varieties of Wallflowers, four of Aubrietia, two of Myosotis, two of Polyanthus, and three of double Daisies, together with Arabis and Alyssum, assisted to produce a very beautiful effect in the spring of this year. Thousands of readers who visit Shrewsbury during the great Flower Show week are acquainted with the charming displays Mr. Arthur J. Ward produces in summer time, but comparatively few have seen the spring display in "The Dingle"—hence our Supplement Plate.

Honour for the Director of Kew Gardens.—At the University Commemoration, held at Adelaide on the 14th inst, the degree of D.Sc. *ad eundem gradum* was conferred upon Dr. A. W. Hill, Director of the Royal Gardens, Kew. Sir George Murray, Chancellor of the University, in conferring the degree, considered the University was honoured by the privilege of conferring the honour on such a distinguished scientist as Dr. Hill.

Wintry Weather.—At the moment of writing, practically the whole of the country is frost-bound. The actual temperatures are, generally, only of local interest, but, as illustrating the exceptional severity of the widespread cold, mention may be made of Falmouth, where something approaching a record has occurred. At this "Cornish Riviera" there have been hard frosts at night, and the maximum daily temperature last week-end was 35° Fah., while the frost continued all day at most southern seaside resorts. This weather will effectively test the hardiness of many of the recent plant introductions, as well as older subjects, and we confidently anticipate interesting communications from readers containing valuable comparisons and records. A short time in Covent Garden Market early on Monday morning reminded us of the anxieties that will beset readers whose greenhouse heating is none too effective, *i.e.*. that special care and, at times, additional protection, is needed. In the market we noticed some consignments of Lilium longiflorum and of white Hyacinths in pots so frozen that the flowers had become almost transparent. We understand that considerable quantities of French flowers suffered similarly during transit. Needless to say, these plants and flowers had been packed in the normal manner, whereas a few extra layers of packing paper would most probably have saved them. The meteorological experts forecast a continuance of cold weather, so, if there is truth in the old saw that "As the days lengthen the cold strengthens," there is worse to come, and all wise gardeners will take measures accordingly.



MR. GEORGE ELLWOOD.

Mr. George Ellwood.—It is no easy matter for a gardener, no matter how able he may be, to follow successfully one who has become widely known as a skilful cultivator and a very capable organiser. For many years before Mr. George Ellwood was appointed to the charge of the famous gardens at Swanmore Park, Hampshire, they had been closely linked in the horticultural world with the late Mr. Edwin Molyneux, who was a man of outstanding personality as well as a gardener of conspicuous ability. When it became known that Mr. Molyneux was to undertake the wider sphere of managing the whole estate, it was realised by all who knew, and they were many, that his successor would have no easy task in maintaining the gardens in their high state of efficiency. We may also state that the garden owner, W. H. Myers, Esq., who has so long been known as a "patron of horticulture"—as the old stylists would have expressed it—with a wide knowledge of gardening, must have fully realised this difficulty. The choice of a successor to Mr. Edwin Molyneux fell on Mr. George Ellwood. This was twenty years ago. Almost from the first it was seen how wise a choice it was. Not only at Swanmore Park itself has Mr. Ellwood made his mark as a gardener of exceptional attainments, but in his many exhibits at the R.H.S. shows he has shown the larger world his quality. Year after year, Mr. Ellwood has staged at the annual competitive shows of this Society garden produce of admirable and enviable high quality. At the fruit shows the names of "W. H. Myers, Esq., gardener Mr. George Ellwood," have appeared with unfailing regularity on the first prize card in the Southern Counties class for Apples, and times almost without number in the single-dish classes. At the annual Vegetable Show, similar successes have been won, as the Sutton Cup and many R.H.S. Cups and Medals testify. At various provincial shows, Mr. Ellwood has continued his successes as an exhibitor of fruits, flowers and vegetables of very high quality. In his earlier days at Swanmore Park, Mr. Ellwood no doubt had the great advantage of having Mr. Molyneux near at hand should any need for opinion or advice arise, but, as always, time intervened, and Mr. Ellwood has continued his work with the same success as before. We have no doubt that he would unhesitatingly admit his good fortune in this matter, as he would in his early training. His initial training was at Aldenham House at a time when Mr. Edwin Beckett was busy making vast alterations and extensions to that famous estate, as well as growing plants and vegetables which won high honours at the shows. After working for eight years in various departments at Aldenham, Mr. Ellwood went to Lockinge Park, another famous garden, then managed by Mr. W. Fyfe, another famous gardener. At Lockinge, Mr. Ellwood also obtained experience in the production and arrangement of very high-class garden produce which was to stand him in good stead a little later. As older readers of *The Gardeners' Chronicle* are well aware, Lockinge and its gardener were synonymous with the best that was in horticulture. From Lockinge, Mr. Ellwood took charge of the gardens of C. R. de la Salee, Esq., at Enbridge Lodge, Newbury, where he successfully carried out many improvements in the pleasure grounds. Orchids were then grown extensively, and Mr. Ellwood raised some good hybrids of Cattleya, Laelia and Cypripedium. He soon became well-known as a successful exhibitor of stove and greenhouse plants and vegetables. After five years at Enbridge Park, Mr. Ellwood went to Swanmore. A man of pleasant, unassuming manner, Mr. Ellwood carries his many honours without affectation, and has endeared himself to his many friends.

Horticultural Exhibition at Antibes.—During the first fortnight of March next, the Horticultural Society at Antibes (Alpes Maritimes), will hold an exhibition which promises to equal in success that of 1924. It will take place in the Place Macé, and in the immense hall of the Grand Hotel, and the numerous classes are open to all horticulturists. A large concourse of visitors is certain to be attracted, and competition for space among exhibitors seems likely to be severe.

Winners of the "Gardeners' Chronicle" Medal in 1927.—Royal Caledonian Horticultural Society, Mr. John Gray, Middlewood, Uddingston; Shrewsbury Floral Fête, G. R. Mellor, Esq. (gr. C. Price), Tan-y-Bryn, Abergele, North Wales; Southport Show, Mr. James Gibson, Welbeck Gardens, Worksop; National Chrysanthemum Society, Captain R. B. Brassey (gr. James Quinn), Cottesbrooke Hall, Northampton; Midland Daffodil Show, Mr. H. A. Marriner, Little Brampton, Billingshurst; R.H.S. Amateur Show, (two Medals), Lionel de Rothschild, Esq. (gr. Mr. Bedford), Exbury, and Gerald W. E. Loder, Esq., Wakehurst Lodge, Ardingly, Sussex; Cheltenham Show, Mrs. Butler, Twyning Park, Tewkesbury; Guildford Gardeners' Society, Mrs. Farnham, The Heights, Witley, Surrey; Colchester Show, H. E. Theobald, Esq., The Rosary, Stanway Green, Colchester; Dundee Show, Mr. Richard Moore, 17, Cleghorn Street, Dundee; Paris Autumn Show, M. Leloup-Grimoux, Chrysanthémiste, La Mans, France; National Sweet Pea Show, Dr. A. V. Boyall, Kildare Lodge, Minehead, Somersetshire.

Public Parks at Konigsberg, Prussia.—During the last few years, the ring of forts which surrounded the town of Königsberg, in Prussia, has been demolished, and the space thus available is being turned to good account to provide fresh open spaces, which will form almost a ring round the inner portion of the town. Preparations are being made to lay out the grounds in a picturesque and attractive manner with ornamental lakes, swimming baths, playing fields, and pleasure gardens; and in the heart of the town—for instance, on the former parade ground—many improvements are being made, the former Reformed Cemetery being also made into an attractive open space laid out as a park. The allotment movement is being encouraged by the municipal authorities; there are at present about 2,800 allotment gardeners, but a large number of new allotments are being made, and laid out on a definite plan as part of the open spaces of the town. By the time the present arrangements are carried out, Königsberg will rank high among horticulturally developed municipalities, and will have good reason to be proud of its parks and gardens department.

Chrysanthemums in the Glasgow Parks.—The citizens of Glasgow are fortunate in the number and beauty of their public parks, also in the number of winter gardens which are situated within the parks. The annual display of Chrysanthemums in the winter gardens at Queen's Park, Springburn Park, Tollcross Park, Botanic Gardens, and Glasgow Green, is something the general public have come to look forward to with keen anticipation. The accompanying illustration (Fig. 238) is from a photograph taken on December 8, in one of the Conservatories at Queen's Park. The display includes approximately 5,000 blooms in great variety, including Incurved as well as Japanese and decorative varieties. About a dozen incurved varieties are grown, including Alice Honor, Charles H. Curtis, Lady Donald, J. W. Streeter and H. W. Thorpe. Japanese varieties are very numerous, and among these are Bob Pulling, David B. Nicoll, Helena Margerison, Margaret McLeod, Mrs. Charles Russell, Mrs. Harold Wells and Viscount Chinda. A display similar to that depicted is provided at the other parks mentioned above, and the crowds who flock to the various parks to view the Chrysanthemums—especially on Chrysanthemum Sunday—indicates the city dwellers' love of flowers.

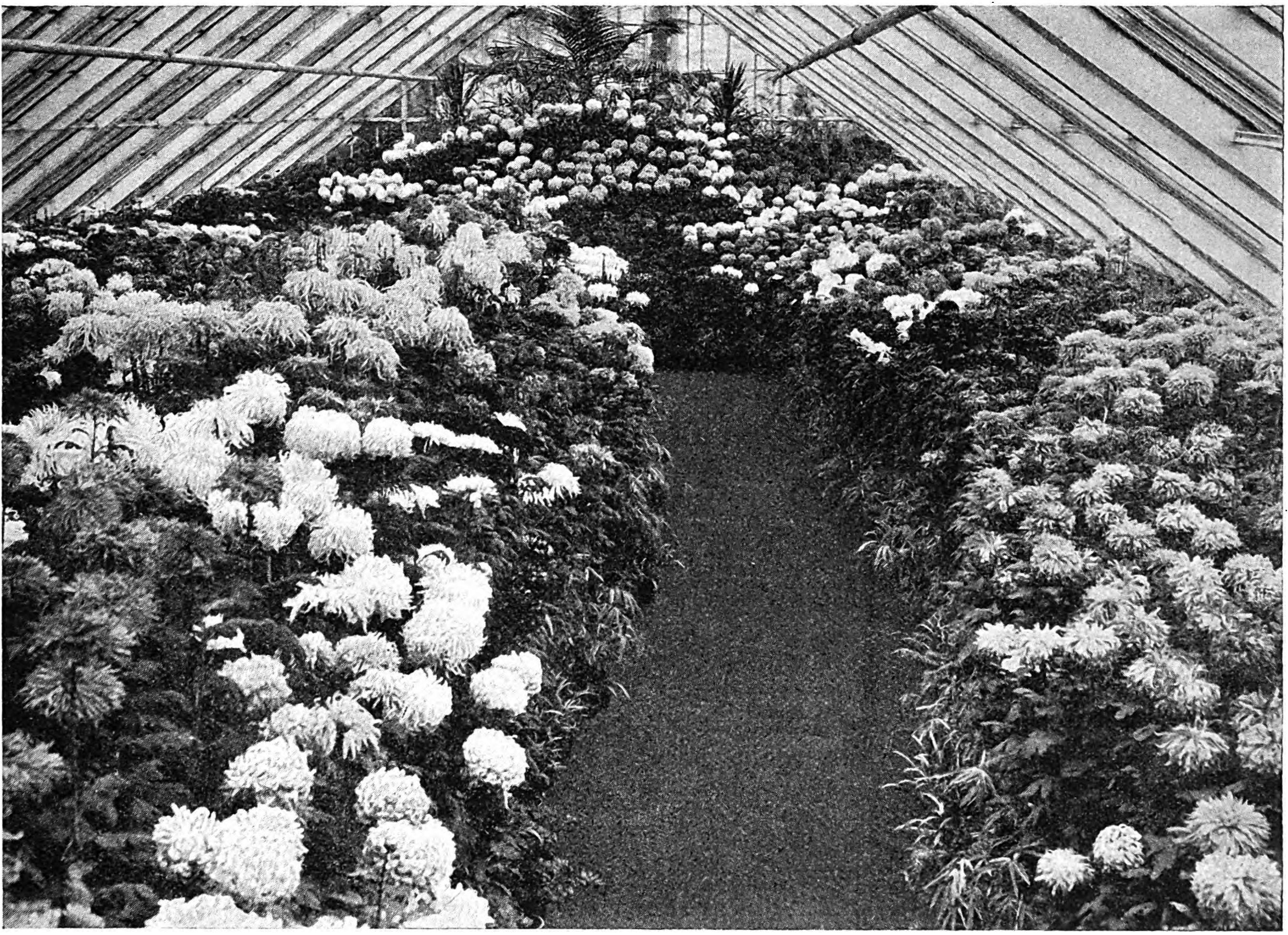


FIG. 238.—CHRYSANTHEMUMS IN QUEEN'S PARK, GLASGOW.

Scottish Classification of Sweet Peas.—The Committee of the Scottish Sweet Pea, Rose and Carnation Society has compiled the following colour classification of Sweet Peas suitable for exhibition in Scotland:—Blue: *Blue Bird, Mrs. Tom Jones; Blush (pink): *Highland Mary, Dainty Maid, Elegance Improved, Valentine; Carmine: *Doreen, Renown; Cerise: *Charming, Coralline, Lucifer; Cerise (salmon): *Mrs. A. Searles; Cream: *What Joy, Matchless, Leslie Rundell; Cream Pink (pale): *Venus, Fair Lady, Cicely, Sunshine; Cream Pink (deep): *Picture, Mary Pickford; Crimson: *Sybil Henshaw, Unwin's Crimson, Red Gauntlet; Flushed (pink): *Mrs. Horace Wright, Carmelita; Lavender: *Powerscourt, Austin Frederick Improved; Lavender (bluish): *Gleneagles, Mermaid; Lilac: *Lilac Queen; Maroon: *Warrior, Splendour, The Sultan; Mauve: *Chieftain, Royal Mauve; Orange: *Royal Sovereign, Guinea Gold, Wizard; Picotee: *Youth (white ground), *Sunkist (cream ground), Jean Ireland; Pink (orange): *Royal Pink, George Shawyer, Crusader; Pink (pale): *Radiance, Supreme; Pink (deep): *Pinkie, Hebe, Miss Philadelphia; Pink (salmon): *Magnet, Miss California; Purple: *Olympia, Purple Perfection, Royal Purple; Rose (carmine): *Private Jack Smellie; Salmon (orange): *Gold Crest, Fordhook Orange; Salmon (cerise): *Grenadier, Royal Scot; Scarlet (orange): *2LO (deep), Mammoth (pale); White: *Model, Edna May Improved, Avalanche, Constance Hinton. An asterisk denotes the variety which the Committee considers best in each section. Both the pale and deep bicolor classes and the deep blue section have been deleted, while cerise (salmon) has been added. Comparison with the 1926 list shows that Charming is now preferred to Coralline; Mrs. Horace Wright supersedes Carmelita; Royal Pink takes the place of George Shawyer, and Model is starred instead of Avalanche. Charity drops out of the crimson class.

Appointment for the Ensuing Week.—THURSDAY, DECEMBER 29: Paisley Florists' Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Labourer's Cottage.*—Employ an honest working builder. Let the ground plan consist of two rooms only, thus: good kitchen, or living room, back kitchen or brew-house, fitted up with all requisites of cooking, grate (Nicholson's of Newark), oven, and boiler, etc. A fire in this is used in summer, instead of in the kitchen, which is thus kept cool for the family. The two rooms should be so arranged as to lead out of and command a view of each other; a third room, or parlour, is worse than useless. Let there be three sleeping rooms, partitioned off for decency and illness' sake, with cellar and larder under ground. The house should be built of good hard brick or stone, and best lime mortar well bedded together to keep out damp. The roof should be overhanging, of blue tiles, with porches back and front, door-ways arranged to avoid draughts. Stained joists in floors, roofs, porches, etc., and plain brick-work without plaster, may be coloured and made to look well and save expense. Let the outbuildings be arranged tastefully and convenient and the garden ornamental. If skill, labour, and materials are good and well combined, you may, perhaps, keep within your limit, otherwise more than double it, and be no better off. *Anon. Gard. Chron., December 25, 1852.*

The Week's Work.

THE ORCHID HOUSES.

By J. T. Barker, Dunstable, Bedfordshire.

Resting Period.—There are few matters more often misunderstood, or of more importance, than the resting or "ripening" of Orchids. Rest is not, perhaps, the proper term to use, as the plants are never actually at rest; what is required is a natural cessation of growth, so far as outward appearances go—for a longer or shorter period, according to the habit of the plant concerned. To induce this natural "rest" during winter, it is not only necessary to lower the temperature, but also to reduce the moisture in the atmosphere, and keep the plants more or less dry at the roots. Enough water should be given to prevent shrivelling, but the compost should not become a hard, solid mass for the want of it. Plants of the Cattleya family are sometimes greatly weakened by an insufficient supply of moisture during the winter and consequent loss of roots. Deciduous Orchids, such as Calanthes, Catasetums, Chysis, Cycnoches, some species of Dendrobiums, and many others which lose their leaves entirely, seldom require water after the foliage has fallen, but should any of the plants show signs of shrivelling, water should be afforded, but no more given until the plants again show signs of distress. Evergreen, distichous-leaved Orchids, such as Vandas, Saccolabiums, Aerides and Phalaenopsis, require more moisture during winter than those with pseudo-bulbs. Very little water is, however, needed by these during the dull days of winter. If the Sphagnum-moss is in a live and fresh condition it will usually absorb nearly sufficient moisture from the atmosphere to provide for the needs of the plants. Vanda teres, and plants of a similar nature, will rarely flower well when treated like the other members of the family. These plants like a decided and long period of rest, and if kept without water for weeks together no harm will follow beyond the loss of a few of the older leaves.

Orchid Pests.—Opportunity should be taken, whilst the plants are at rest, to cleanse their surroundings, and to give special attention to the eradication of insect pests. The leaves of the majority of Orchids are fully matured, therefore the cleansing operations may be undertaken with little risk of injury. One of the worst pests of Orchids is scale, which conceals itself under the leaves and the outer sheaths of the bulbs. In cases of bad infestation the sheathing should be removed, and the plants thoroughly immersed in some safe insecticide. When cleansing the plants it is advisable to have a bowl or tub sufficiently large to permit the immersion of each plant in the insecticide; thoroughly wet the leaves and the pseudo-bulbs (but not the compost) to ensure the destruction of every insect. After withdrawing the plant, hold it over the bath to drain, and then place the pot on its side to allow the foliage to dry. Following this cleansing operation, each plant should be examined carefully and sponged, the pots made thoroughly clean and the plants re-staged, so that each receives the maximum amount of light.

THE KITCHEN GARDEN.

By R. H. Crookford, Gardener to The Rt. Hon. Lord Wavertree, Horsley Hall, Gresford, N. Wales.

Seed Orders.—Catalogues have already come to hand and no time should be lost in ordering the necessary seeds. Purchase from a reliable source as the best seeds are the cheapest. It is always interesting to test a few new varieties, but at the same time one should continue to grow those kinds and varieties that have proved suitable to the soil and climate of the district; for instance, a certain Pea may produce excellent results in one locality, and prove almost useless in another. No attempt should be made to rely on old seeds of Parsnip, Parsley, Carrot, Salsify, Scorzonera, Spinach, Onion or Beet, or disappointment may follow. When the seeds arrive, store them in a dry place. Seed Potatos should be placed in trays, with the eyes uppermost, away from frost.

Rhubarb.—Where no forcing house exists and early Rhubarb is required, a start should be made now by covering a few good early crowns with pots, tubs or boxes, and placing fermenting materials (equal parts of leaves and manure) between and over them. This should give a gentle, lasting warmth. Good stalks may be expected in six or eight weeks. Failing manure, leaves will answer the purpose equally well, but a slightly longer period will elapse before the stalks are ready. Seakale may also be treated in this way, but all light must be excluded, or the stems will be badly blanched.

Tomatos.—Where a temperature of 55° to 60° can be maintained, seeds of Tomatos may be sown. Immediately these have germinated place them near the glass, in a light position, so as to promote sturdy growth from the start. Plants fruiting in pots should, for the present, be very carefully watered, and a dry, warm atmosphere maintained. Gentle stimulants may be given about every ten days, and the roots lightly top-dressed with good loam, wood-ash, and a little bone-meal so soon as they show through the surface soil. Fertilise the open flowers by using a camel-hair brush, or rabbit's tail, and rap the trellis about midday, when the pollen is dry.

PLANTS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Indian Azaleas.—Plants of early varieties of Azaleas, such as Deutsche Perle, Fielders' White and Hermosa, may be placed in a little warmth and forced gradually to come into flower early in the New Year. Azaleas are subject to thrips, therefore the plants should be dipped or syringed occasionally with a solution of nicotine.

Coleus thyrsoideus.—This is now producing its flower spikes, and where the receptacles are well filled with roots, some reliable plant food may be given to assist them. This is a most useful plant to grow for producing flowers during the dullest months of the year. The flowers last for a considerable time when cut.

Lasiandra macrantha.—Where blue- and purple-flowering plants are popular during the winter months, this plant is well worth growing; it is of easy culture. The correct name of this old garden plant is Tibouchina semidecandra.

Begonias.—Plants of the Gloire de Lorraine type should be removed from the show house so soon as the flowers have faded, and have their growths slightly shortened in view of procuring cuttings for next year. Retain only those plants that have made strong growths at the base. After the plants have been cut down they should be kept slightly drier at the roots for the next few weeks and in a somewhat lower temperature. After this short rest they may be brought into a temperature ranging from 65° to 70°, when basal shoots will soon be forthcoming to provide reliable cuttings. Experience teaches me that success with these Begonias depends largely on the constitution of the plants that are to furnish cuttings. Plants attacked with mite should be dusted with flowers of sulphur and the house vaporised with Campbell's vaporiser. Late Begonias that are being grown to furnish plants for decorating during January should receive liquid manure to assist them in the development of their flowers. B. Mrs. Peterson will be found a very useful variety for late use. Winter-flowering Begonias of the section represented by Optima, Mrs. Heal, Exquisite, Ideala and others, should, as they pass out of flower, be kept in a cooler house and allowed to become somewhat dry at the roots, but they must not suffer from an entire lack of moisture at the roots during the resting period, otherwise there will be losses.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Colonel Spender Clay, M.P., Ford Manor, Lingfield, Surrey.

Early Vines.—This is a good time to start the early permanent vines; the inside borders may be the better for another watering. If the vines are young and strong, clear water only, at a temperature of 80° will answer, especially if the border was well top-dressed. Old vines, on the other hand, cannot easily be over-fed; their roots may be watered with warm, diluted, liquid manure from the start. The syringe must be used to moisten old rods, especially near the pipes, and walls, floors and other surfaces. Here, as for pot vines, young canes being forced for the first time may be kept bent down, whilst old ones may be secured to the wires from the start. When well started, and all the buds are on the move, the young canes should be tied up to the wires without delay, otherwise the shoots will draw backwards to the light, and besides looking unsightly, they give unnecessary trouble in training. The temperature at this stage may range from 50° to 55° by night, and 60° to 65° through the day, with a rise of a few degrees with sunheat, but no advance should be made at night for the present.

Mid-season Vineries.—The vines should be pruned and the house cleansed and put in working order, but the vinery must be kept cool and airy to ensure a long and decided rest for the vines. If plants have to be kept in these vineries they should be of the hardiest nature, otherwise constant shutting up at night will affect the vines. All top-dressing and root work will have been finished, and the outside borders, if any, lightly covered with Bracken or litter to keep out frost. The roots, as a matter of course, will be quite moist enough, but if autumn watering was neglected it will be well to allow borders to remain on the dry side just after pruning.

Late Vineries.—Vineries in which ripe Grapes are hanging cannot be kept too cool and airy in mild, dry weather. A temperature of 50° is high enough for all black Grapes, but Muscats may be allowed 55° with a gentle circulation of fire heat when danger from frost is apprehended. The fall of the leaf is a trying time, especially in low houses, but damp may be counteracted by gathering the leaves daily and by warming the pipes on fine days and opening the ventilators. The lighter the firing and the steadier the temperature the better will the Grapes retain their colour and keep in a fresh, plump condition. Houses in which only a few bunches of ripe Grapes are hanging should now be cleared, not only for the sake of the fruit, but for the benefit of the vines. The Grape room is the best place for bottled Grapes, but when this structure is devoted to the storage of choice Pears, the gentle warmth so essential to the latter will fit it for the reception of Grapes. Artificial heat is necessary at times, but its constant use is almost as bad as an excess of moisture. If the Grape room can be kept cool and dry frost is excluded, and the ventilation perfect, Grapes will keep fresh and plump for months after they are removed from the vinery. When cutting Grapes before the leaves fall, the latter should be left to ripen and drop.

HARDY FRUIT GARDEN.

By H. Markham, Gardener to the Earl of Strafford, Wrotham Park, Barnet, Middlesex.

Peaches and Nectarines.—Trees of Peaches and Nectarines have made plenty of growth this season, but the wood has not ripened satisfactorily. Where the leaves are adhering to the shoots a gentle shaking or brushing will reduce them and expose the wood to light and air, thus giving it a better chance to harden before frosty weather sets in. After the leaves have fallen, pruning and training is an easy business, provided proper attention was paid to disbudding and the removal of useless young growth during the growing season. As the fruits are produced on the young wood, care should be taken to retain the best placed growths all over the trees, both for fruiting and also for replacing older growths; avoid overcrowding. A good Peach tree should be evenly balanced and thinly trained to the walls or wires. When pruning and regulating the branches of large-sized trees it is a good plan to commence on one side, remove the fastenings, and cut back unripened shoots to sound, firm wood, and to triple buds, or to a single wood bud. Sturdy, well-ripened shoots should be left at their full length. If scale is present, dress the affected parts with a nicotine insecticide, or any other suitable mixture, but always be careful not to use strong insecticides on young fruiting shoots or the buds may be injured.

Young Trees.—Planting may take place from now until next March. Only plant good varieties to keep up a lengthy supply of fruits. When laying the foundation of fan-shaped trees, keep both sides of the tree evenly balanced and do not encourage a central shoot.

Vines.—The pruning of all outdoor Vines may be carried out when the leaves have fallen. If done at this season the danger of bleeding is greatly lessened. Established canes should have their lateral shoots cut back to one or two plump buds, and younger vines, which have not reached their limit, should be allowed to extend two or three feet each season until they have filled their allotted space. Those about to plant young Vines should choose a warm position, facing full south. The drainage should be thorough, and the soil sweet and fibrous, with plenty of lime-rubble, wood-ash and crushed bones added; if the soil is heavy, the addition of charcoal will help to keep it sweet and porous.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Skimmias.—These attractive, dwarf, evergreen shrubs are useful for permanently furnishing a large rock garden, or the front line of a shrubbery. Their successful cultivation presents no difficulty as they thrive in a variety of soils. Their white, fragrant flowers are attractive, but the chief attraction is their bright red fruits. As they are dioecious, a few male plants must be planted to ensure a crop of fruits. S. japonica, of which there are quite a number of varieties, is the species most commonly seen in gardens; all the following are now known to be varieties of S. japonica, viz.: S. fragrans, S. fragantissima and S. Foremani—male forms, S. Veitchii and S. Rogersii. Where they do not set fruit freely, Skimmias should be pollenated artificially.

Pernettya mucronata.—This is another dwarf evergreen shrub which is worth planting for its beautiful fruits; these fruits vary in colour, from almost black to white, and are produced in wonderful profusion. The finest varieties, generally known as Davis's hybrids were raised by Mr. L. J. Davis, Hillsborough, Co. Down. They grow freely in sandy loam or in peaty soils and when in full fruit they are very attractive. Small, freely-fruited plants may be potted up for furnishing the cool greenhouse.

Iris foetidissima (The Gladwyn).—Irises are usually planted for their beautiful flowers, but this native species, with tall, purplish flowers, has no claim in that respect; it should, however, be more generally planted for the sake of its beautiful, orange-scarlet seeds, which are useful for winter decoration. The Gladwyn is suitable for planting with hardy Ferns, or in the semi-wild parts of the garden.

Danaë Laurus.—The beautiful Alexandrian Laurel is more generally known as Ruscus racemosus. Its long sprays of glossy, green foliage are ideal for many floral arrangements, but apart from its usefulness in this connection, it is a fine garden plant that enjoys a moist, rich soil, and thrives in shady or partially shaded places. It is said to thrive on chalky soils, but I have had no experience of it in such conditions.

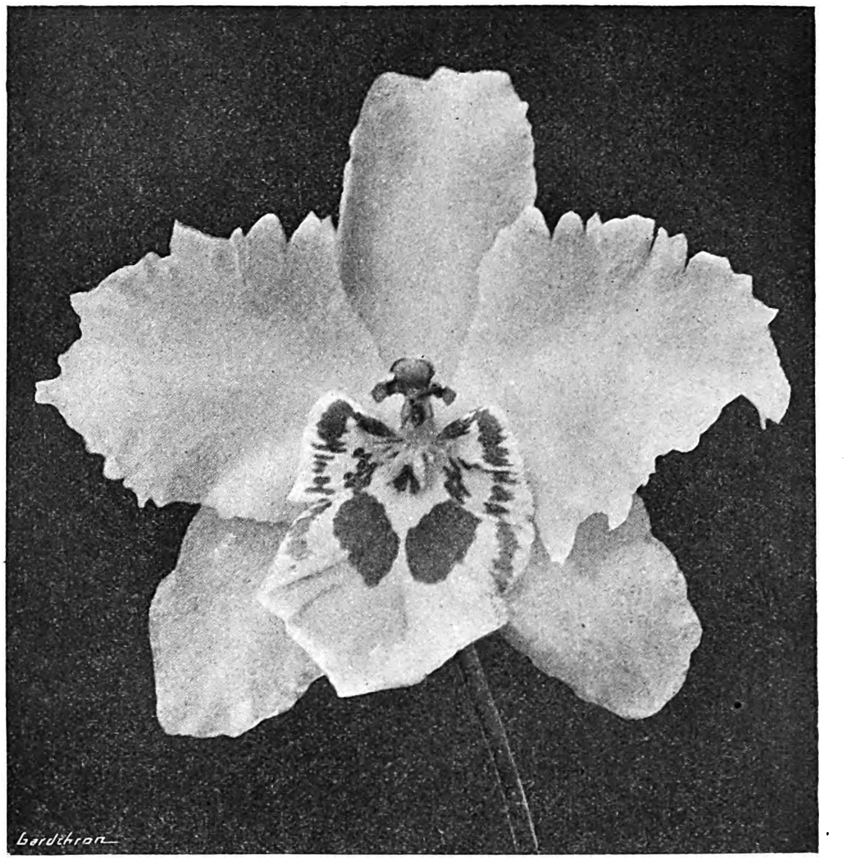


FIG. 239.—ODONTONIA OLGA.

R.H.S. Award of Merit, December 13. Flowers white, with red spots on the lip. Shown by Messrs. Charlesworth and Co. (see p. 493.)

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

True Winter-flowering Plants.—It is at this season of the year that we appreciate most fully those plants which naturally produce their flowers in the open in mid-winter, and although it is not unusual in some seasons to find quite a variety of plants showing a few flowers, such as Laburnums, Exochordas and Crinodendrons, we know this effort on their part is untimely, and that their next season's display may be to a certain extent impoverished by it. This is not the case, however, with Jasminum nudiflorum, whose bright yellow stars are produced in mid-winter. The culture and propagation of this plant is of the simplest, as any fully established specimen will produce plenty of suckers, and if these are lifted carefully and placed in nursery rows, they soon make useful plants. Among other winter-flowering plants are the well-known Viburnum Tinus which is covered with clusters of tiny white flowers from December onwards. All the members of the Arbutus family usually met with produce their waxy-white bells while at the same time carrying their crop of red, Strawberry-like fruits. Garrya elliptica is too well-known to need further commendation, but it seems a pity that so many of the male form have been planted to the exclusion of the female, with the natural result that seeds or berries are very rarely seen. Among the Ericas we have also some winter-flowering plants, and where Heaths do well they are worthy of extended culture; and E. codonoides is one of the best, producing, its pure white flowers from December to March while the earlier forms or hybrids of E. carnea are now commencing to make their annual display. The Glastonbury Thorn, Crataegus praecox, does sometimes make an effort and produces its clusters of Hawthorn-scented flowers in mid-winter, but apart from the legend attached to this variety, it is not a very conspicuous or interesting subject. The Witch Hazel, Hamamelis arborea is a decided acquisition; against a background of evergreens, its yellow, spider-like flowers are seen to advantage.

Polyanthuses and Coloured Primroses.—Very few seasons pass without some mention in the daily press of the precocious nature of these plants, and it is not always from the mildest parts of the country that the announcement is made. In our mild district, Polyanthuses and Primroses are almost continually in flower from November onwards, and cause no unusual comment. Where flowering plants are scarce, a number of these may be lifted and potted up, and placed in a cool house, where, if given plenty of air and water, they will very soon throw up numerous spikes, in the case of the Polyanthuses, and single flowers in that of the Primroses, and make quite a good show a few weeks ahead of those left out-of-doors.

Basic Slag.—The present time is, perhaps, the best in all the year for applying this useful manure. There are very few crops in the kitchen garden which do not benefit by its use. Fruit tree quarters may be given a top-dressing at the rate of four ounces per square yard, and when succeeded by half that quantity of kainit, and, if necessary, a similar amount of sulphate of ammonia in spring, a very complete and economical fertiliser will have been applied. The use of basic slag on lawns, however, is not recommended, as it tends to increase the growth of Clover at the expense of the fine grasses. Where farmyard manure is difficult to obtain, much may be done to eke out the scanty supply with these slow-acting chemicals, but when applying them they should be left on the surface and not dug into the soil, as the winter rains wash them down out of reach. Where club-root has been troublesome, these artificial manures appear less likely to spread and encourage this disease than manure which may have been obtained from a tainted source, while the application of lime, also on the surface, after digging, is a great help in combating this enemy of the kitchen gardener.

INDOOR PLANTS.

URCEOLINA PENDULA.

This quaint and very pretty bulbous plant is now somewhat rare in gardens, although once quite frequently seen. The flowers are pendant, the perianth yellow in the basal half, the remainder green and faintly margined with white, urn-shaped and about two inches long. The segments are lanceolate, the three outer ones rather longer than the inner ones; several flowers are produced in an umbel. The leaves are solitary, occasionally twin, erect, many-nerved and glabrous.

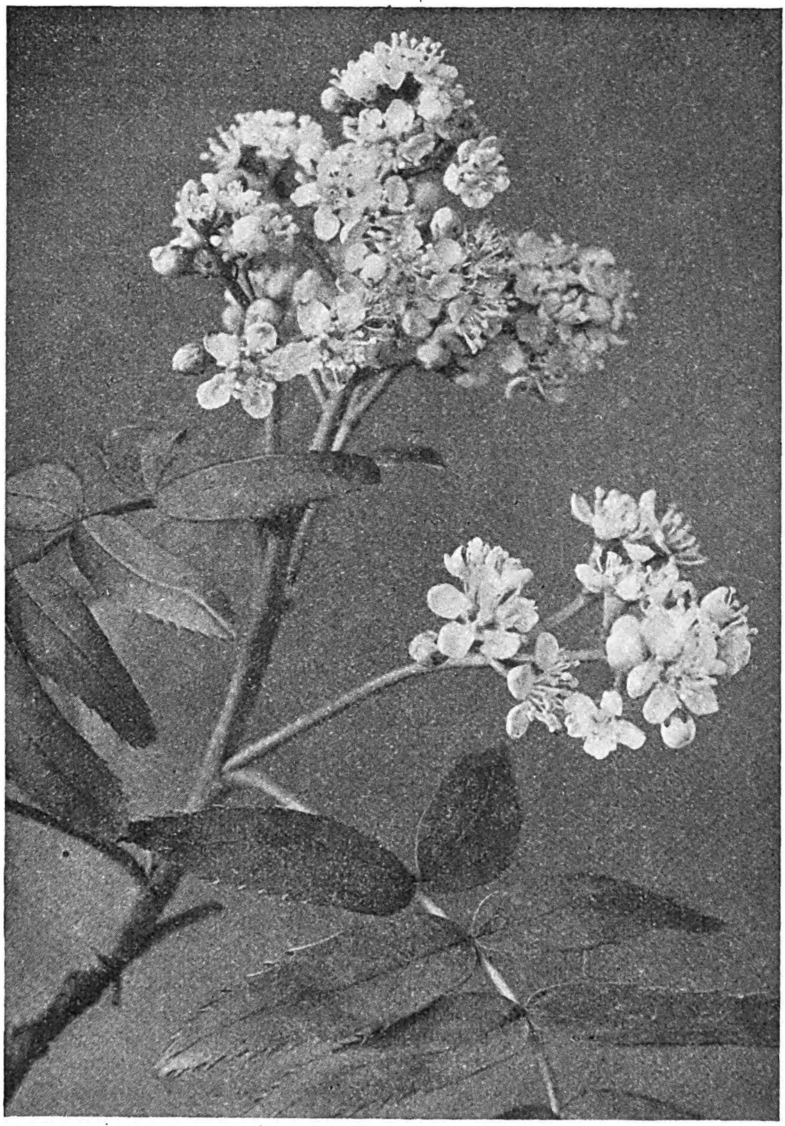


FIG. 240.—FLOWERS OF THE SERVICE TREE.
(see p. 504).

Urceolina pendula thrives in an intermediate temperature, the cultural treatment required being similar to that provided for Hippeastrums except that the "rest" should not be quite so pronounced as that required by the better-known plants. Popularly known as the Drooping Urn Flower, U. pendula is synonymous with U. aurea. A native of the South American Andes, it is figured in *Bot. Mag.*, t. 5,464 and has been referred to Collania urceolata. Other species of Urceolina are U. latifolia and U. miniata, both uncommon in cultivation and scarcely known outside botanical collections. *A.*

LONICERA HILDEBRANDIANA.

This magnificent Honeysuckle is very suitable for cultivation in a large and lofty conservatory or greenhouse. The clusters of big, trumpet-shaped flowers of bright and exceedingly attractive orange colouring—not, perhaps, produced with any great degree of freedom—are finely displayed against the large leaves. L. Hildebrandiana enjoys a well-drained root-run of loam and peat, the former in preponderance, and ample "head" room is essential. In a favoured corner in some mild districts this great Chinese plant may succeed, but I doubt whether its full magnificence may be realised better than when it is seen festooning the columns and rafters of a spacious structure. *R. A*

EUPHORBIA PULCHERRIMA.

Widely known and generally grown as Poinsettias, these plants have developed their brilliant bracts, and should be placed in a drier atmosphere and a somewhat lower temperature than hitherto, so as to prolong the life of the "heads." Poinsettias are excellent plants for bold grouping and may be used in a cut state, provided the cut ends are dipped in hot water. Poinsettias dislike the careless application of water to their roots as well as sudden fluctuations of temperatures; errors in these respects will be followed by loss of foliage.

CAMELLIAS.

Whether Camellias are grown in pots or planted out in borders, they will be found to thrive best when grown under the very coolest conditions. When it is remembered that Camellias will thrive and produce a serviceable supply of flowers when grown out-of-doors in sheltered positions, it is a matter of surprise to discover how much the plants are coddled in some establishments.

But whether planted out in greenhouse borders or grown in pots, Camellias should be well supplied with water, for if the roots are allowed to become dry the buds that are now swelling will drop. Feed the roots with a concentrated fertiliser, or liquid manure, and make an effort to cleanse the foliage before the flowers commence to open. *T. P.*

ORCHID NOTES AND GLEANINGS.

SELENIPEDIUMS.

Members of this once popular group are still worthy of a place in collections, and will undoubtedly come back to favour and be as popular again as they were in the past. There are numerous beautiful hybrids, whilst some, such as the C. caudatum hybrids, with their long tails, are most attractive at whatever season they bloom. Plants that are root-bound and require repotting may be attended to, even at this season, using a similar compost to that usually recommended for the green-leaved, winter-flowering kinds.

The usual caution necessary in regard to watering newly-potted plants must be strictly observed at this season of the year. Each plant should be kept plump and healthy, for if the leaves are allowed to lose their fresh and robust appearance through dryness, they rarely, if ever, recover. Most members of this section of Cypripediums succeed in a lower temperature than do the summer- or the winter-flowering kinds, and a cool Cattleya house temperature will answer their requirements. *J. T. B.*

VANDA SUAVIS AND V. TRICOLOR.

These magnificent Vandas were introduced by Messrs. J. Veitch and Sons, from Java, about 1846, where they were discovered by Thomas Lobb.

The two species are associated in their native home, and have often been imported together; the structural differences are small, hence a little confusion has long existed, some authorities according to both specific rank, others making suavis a variety of tricolor, and yet others describing tricolor as a form of suavis.

The leaves of V. tricolor are curved, imbricating at the base and unequally two-lobed at the apex; the scapes are stout, several-flowered, ascending or spreading. The flowers are two inches to three inches across, fleshy and fragrant; the sepals and petals are whitish-yellow, spotted with reddish-brown. The lip is three-lobed; the side lobes small, erect, rounded, white; the mid-lobe magenta-purple, white at the base, with some suffusion or streaks of reddish-brown on the basal area. The lip is slightly convex above, with three ridges; the spur is short, compressed, white, and the column is swollen laterally at the base.

In V. suavis, the sepals and petals are white, spotted and barred with red-purple; the lip is three-lobed, the middle or front-lobe narrow, the basal half rich purple, and the apical half of paler colouring, the side-lobes being deep rose-purple.

These magnificent Vandas vary in height, under cultivation, from one foot to five feet, and the leaves are twelve inches to eighteen inches long; the plants may be grown in pots or pans half filled with crocks. Osmunda fibre is the best rooting-medium, with a surfacing of live Sphagnum-moss. Root disturbance is inimical to success, so that repotting should not be undertaken until it becomes an absolute necessity. Leggy stems—and these are not unusual—may be carefully reduced when root action commences, unless the appearance of basal growths should render this unnecessary.

The Vandas here described require a temperature of a stove house, considerable atmospheric moisture and shade from direct sunshine; a dry condition at the roots will not be tolerated, but during the winter months considerable care should be exercised when watering.

A large, well-flowered plant of V. tricolor or of V. suavis is a fine sight—it is a combination of glorious colouring, fine proportions and graceful port; the largest and best-flowered plants I have known were accommodated in a warm house with a north exposure, and placed on staging fixed over a water tank.

The Chatsworth variety of V. suavis has its sepals and petals profusely spotted and streaked with blood-purple; the lip is rosy-purple, suffused with a deeper shade. In the variety Sanderae, the flowers are pure white, spotted with light, greenish-yellow. Another varietal form is Gottschalckei.

V. tricolor planilabris is a fine variety; its flowers are larger than those of the type, the sepals and petals being yellow, marked with brown, while the large lip is rose, margined with purple, and has a white basal area. The variety insignis must not be confused with the species V. insignis (Blume) from Malaya.

These fine Orchids will sometimes flower two or three times during the year, and should certainly again receive the attention they once enjoyed. *A. C.*

ALPINE GARDEN.

SAXIFRAGA L. C. GODSEFF.

Various names appear to be applied to this charming hybrid Saxifraga of the Burseriana section, and occasionally it is spoken of as S. Godseffiana or S. × sancta speciosa. It is one of the hybrids which derive their origin from S. sancta and S. Burseriana speciosa. It has the habit of S. Burseriana, and forms little mats of green, shiny foliage and, very early in the year, gives an abundance of its small, bright yellow flowers. It is an easy grower and flowers freely every year. S. L. C. Godseff delights in a moraine or in light gritty soil in the rock garden. I always prefer to give it a sunny position.

POLYGONUM EQUISETIFORME.

The Polygonums or Knotweeds are almost protean in their form, and it is difficult to realise that certain of their number are allies of some of our common and often troublesome species, which sometimes appear to set themselves out, not unsuccessfully, to monopolise much of our garden space. There are some which are mere weeds, with no claim to beauty, but there are others of the greatest charm and claiming universal admiration. Others, again, are marked by some striking feature which gives them high claims upon us.

The one under notice, P. equisetiforme, is among the last class, and is a plant markedly divergent from the "beaten track" of the race. It may be said to be a Knotweed masquerading as a Broom, and one of its synonyms is said to be P. scoparium, although a reference to the *Index Kewensis* does not quite support the late Mr. Reginald Farrer's statement to that effect.

However that may be, this is a plant of much interest, which grows about two feet or so high, and produces numerous, wiry branches like those of some of the lighter Brooms, and totally unlike most of its congeners. In late summer and autumn it bears many small, white flowers, and the whole appearance at flowering time is very graceful. The late Mr. Farrer wrote enthusiastically in its favour, suggesting that it should be planted on the top of a sunny elevation where it would fall and partially veil the rock, but it is quite a good border plant, and seems to remain fairly erect there without assistance. It is one of the many rare plants at Monreith, and hardly ever fails to attract the notice of interested visitors to that wonderful garden. *S. Arnott.*

BELLIUM MINUTUM.

This tiny Daisy is a delightful little plant for a sunny, well-drained spot in the rock garden; it will furnish a beautiful pan for the alpine house and is eminently suited for use in the rockwork of a fascinating alpine house. The tiny, white flowers have the very faintest suffusion of pink colouring; they are not more than half-an-inch in diameter, and surmount slender stalks that are longer than the foliage. This species flowers from June to September, and is not more than three or four inches in height; the small leaves are narrow, attenuated at the base and slightly hirsute. Thriving in sandy loam and peat, propagation of B. minutum is readily effected by seeds or by division in spring.

This interesting little plant was introduced from The Levant in 1772, and is a delightful companion to the Algerian Daisy, Bellis rotundifolia coerulescens. Bellium is very near to Bellis and very like it in appearance. *Ralph E. Arnold.*

SHORTIA GALACIFOLIA.

It is not difficult to understand the favour with which Shortia galacifolia is viewed by those who own rock gardens in which it is a pronounced success. These are many, for the plant is not one presenting untoward difficulties of culture, and its intrinsic beauty is so great that those who have it never weary of sounding its praises, or dwell with enjoyment upon their plants in growth. It is charming alike when in bloom and out of flower. When in flower in spring it delights us with its nodding flowers of white or pinkish-white, and, later, the graceful, persistent leaves are marbled in a most exquisite way with crimson, pink and ivory white. These charms cannot be ignored, and so S. galacifolia remains a high favourite with the alpinist. Its principal requirements appear to be a free soil of leaf-mould or peat, with sun, if we are to reap the full enjoyment of the colouring of the foliage. The white form is very beautiful but some have a preference for the rose-coloured one, rosea. Both respond to the same treatment, and it may be well to mention that it is better to pay a good price for a large plant established in a pot, ready to turn out, rather than pay less and have a small specimen that will take a long time to establish itself.

S. galacifolia is a much easier plant than its lovely Japanese cousin, S. uniflora. *S.*

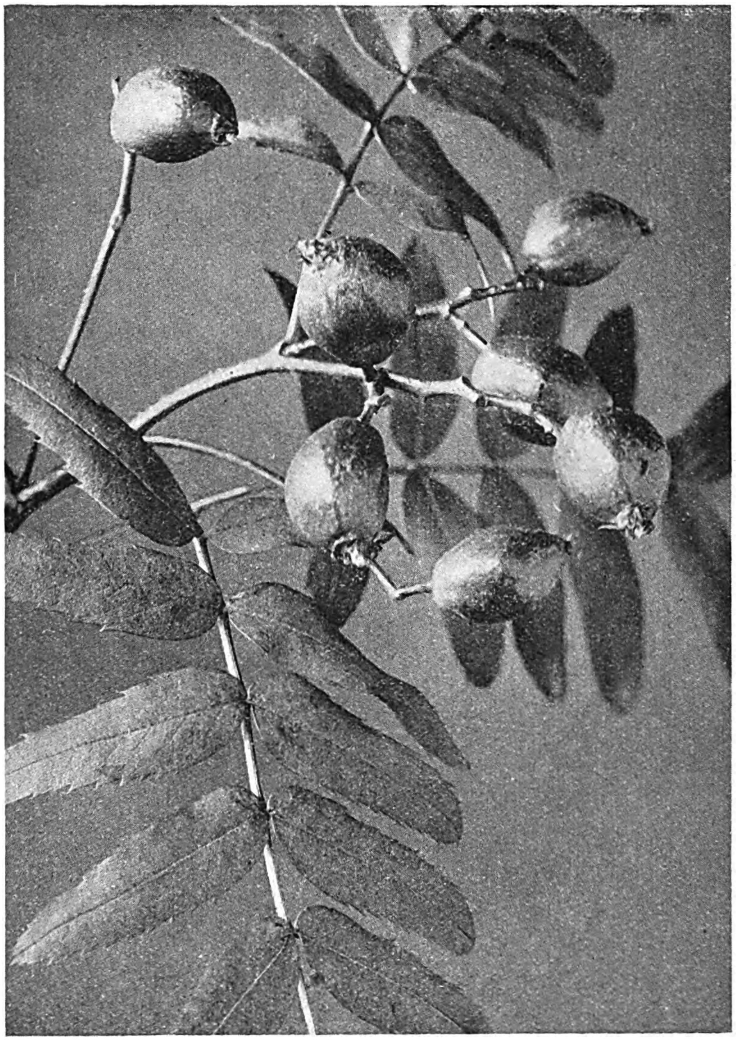


FIG. 241.—FRUITS OF THE SERVICE TREE.
(see p. 504).

BOG GARDEN.

SAXIFRAGA PELTATA AND GUNNERAS.

This fine plant, with its large, handsome leaves, is an ideal subject for planting along the lake- or stream-side, as well as for the bog garden, large groups of it being very effective arranged with other plants, such as Gunneras, Rodgersia podophylla and the newer R. pinnata, which is very handsome, with its big inflorescences of rosy-red flowers and handsome bronzed foliage. They all enjoy a free root-run with plenty of humus in the soil.

Gunneras, which cannot withstand severe frosts, should be protected against possible injury by having dry leaves or Bracken placed round them, covering the whole with their own leaves. Gunneras are very handsome when planted near the margins of ponds, or streams, or in moist, sheltered positions; they require a large and rich root-run. The planting site should be prepared with good loam and plenty of well-rotted manure; established plants should have a heavy dressing of rotted cow manure each spring. *J. C.*

VIOLA HOWELLII.

This delightful little Violet from north-west America has reniform leaves of a most refreshing shade of green; the small flowers, freely produced, are clear yellow and in evidence during the greater part of the year.

During the last two or three seasons, this species has been remarkably effective in a moist peat bed, in company with dwarf Rhododendrons, Meconopsis, Dodecatheons and Smilacinas. It increases apace and is always of cheerful appearance; it thrives, however, in almost any ordinarily good soil, and prefers a moist situation in half shade. *R. A.*

HARDY FLOWER BORDER.

VERBASCUM.

The Mulleins are peculiarly suitable for grouping in the hardy flower border and in the wild garden, while, if colonised in the woodland, their stately port and soft, but effective, colouring rarely fails to arouse admiration. The foliage of the larger species and varieties is undeniably handsome, and where the plants appear in generous masses, the effect of the amply-proportioned and somewhat hoary leaves is noble. The majority of cultivated Verbascums are best treated as biennials, and their cultural requirements in any ordinarily good soil are of the simplest.

V. olympicum is a stately plant with a candelabra-like stem, five to six feet high; the flowers are individually large and bright golden-yellow. The woolly leaves are broadly lanceolate, acuminate and very handsome. This popular species was introduced from The Levant in 1883.

V. phoeniceum is a charming species and one worthy of extended cultivation; the colourng of the flowers ranges from pure white to shades of red, pink, violet and purple. This somewhat slender plant grows two to three feet high, and its leaves are glabrous above and pubescent beneath; the flowers are loosely and elegantly arranged upon the stem. This Mullein is often increased by self-sown seedlings, and a colony of plants is most effective; it is an old plant in gardens, as it came from southern Europe so long ago as 1796.

V. phlomoides, the Woolly Mullein, has fascicled yellow flowers on three-feet spikes, and handsome foliage; a fine species and one of the oldest in cultivation; it was introduced from southern Europe in 1739.

V. ovalifolium is a dwarf species from Tauria, whence it came in 1804; the large flowers are orange, with purple filaments, and the leaves are ovate. V. cupreum is a very pretty, dwarf plant, probably a form of V. phoeniceum.

V. Chaixii, the Nettle-leaved Mullein, produces yellow flowers in loose, many-flowered fascicles; the leaves are crenate, tomentose beneath, and the height of the plant is about three feet. This species is widely distributed over southern and central Europe, and was introduced in 1821.

V. longiflorum is a beautiful plant with greyish-white foliage of tropical appearance and huge spikes, six feet high, of yellow flowers. V. Libani has an imposing inflorescence of yellow flowers and bronzy foliage; the plant reaches a height of five feet. V. densiflorum, with stout spikes of coppery-yellow blooms, is very attractive, and is about three feet in height.

Other species deserving of mention are V. vernale, with immense spikes of yellow flowers; V. Wiedmannianum, violet-red, a fine plant; and V. leianthum, with huge pyramids of yellow flowers.

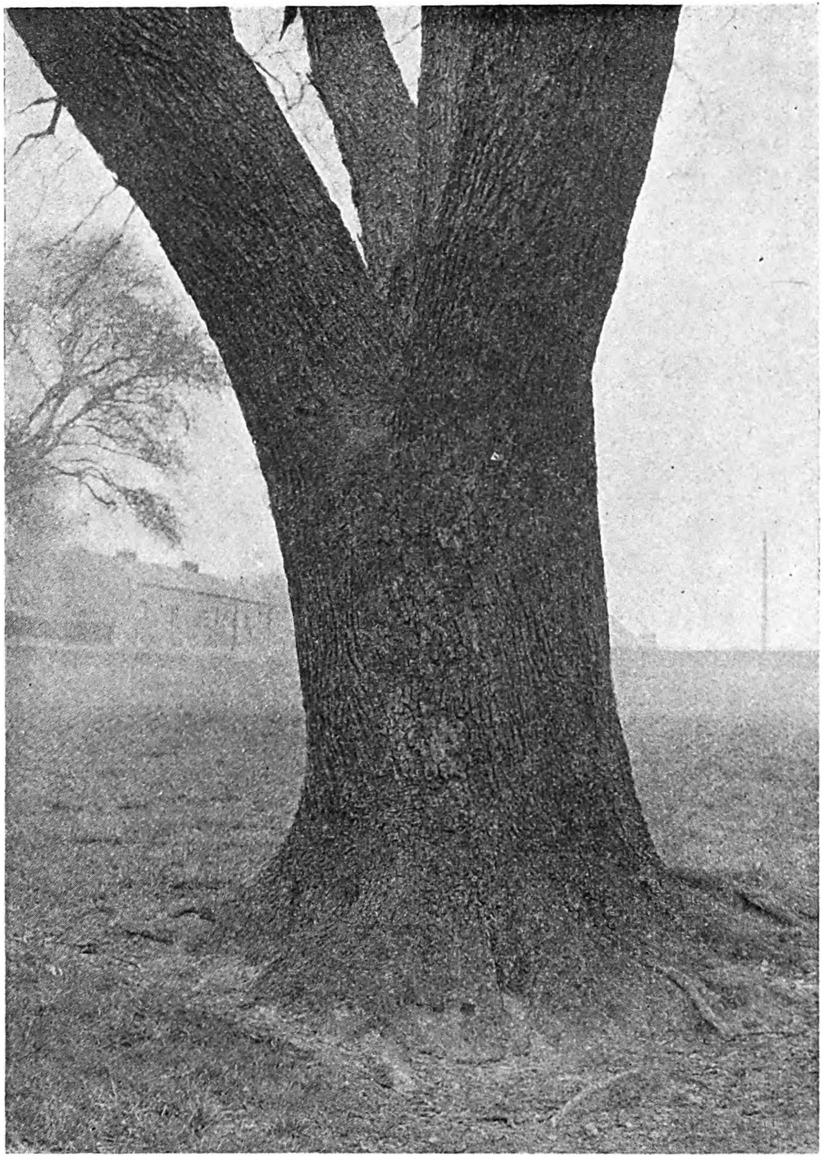


FIG. 242.—BOLE OF THE SERVICE TREE AT HALE END.

Attractive hybrids of comparatively recent introduction include Caledonia, three feet, sulphur-yellow, shaded bronze; Miss Willmott pure white, four to six feet; New Departure, buff-yellow, three to five feet; A. M. Birnie, six feet, rosy-fawn, a beautiful variety; Harkness's hybrids; Cotswold Queen, crushed strawberry, beautiful and unique; Beauty, biscuit, shaded purple; and Gem, bronzy-yellow, shaded purple.

The genus Verbascum is represented in our native flora by several species: V. Thapsus, V. Blattaria (probably introduced), V. virgatum, V. nigrum, V. Lychnitis, and V. pulverulentum. Bentham and Hooker record that "The genus extends over Europe and northern and central Asia, but is most abundant in the Mediterranean region, where the species vary much, besides frequently producing natural hybrids, so that their distinction has become very complicated." *A. C.*

LATHYRUS ROTUNDIFOLIUS.

Only a limited number of the perennial climbing Peas are much seen in gardens, and of these Lathyrus latifolius, the common Everlasting Pea, is the general favourite. It is a pity, though, to neglect some of the others, and a comparatively low-growing species, L. rotundifolius, is a plant which ought to be borne in mind. Roughly speaking, it is about five feet high, and is excellent for climbing up a low trellis or over a small shrub. It is many years since it was first brought to the notice of the writer and a number of other hardy plantsmen by a now departed hardy plant grower whose contributions to the horticultural press were always instructive and interesting. It proved worthy of his commendation, so pretty was this slender-growing, dwarf climber, with its brightly-coloured flowers.

L. rotundifolius is of slender growth and has, in early summer, heads of small, salmon-scarlet flowers. This verbal description comes far short of conveying adequately the brightness of this perennial Pea. It is hardy, and may be raised from seeds, sown under glass in spring or in the open in May or June. It should have a sunny place. *S.*

TREES AND SHRUBS.

A FINE SERVICE TREE.

At the suggestion of Mr. W. J. Bean, I send you the following notes on a fine specimen of the true Service Tree (Pyrus domestica, Linn.), which it seems desirable to put on record. The tree is growing in a sloping meadow belonging to Beech Hall Farm, about ten minutes' walk from my house, and is almost on the left bank of the Ching Brook, which runs between the meadow and the gardens of the houses in a neighbouring road.

Beech Hall itself, with its immediate grounds, is in the market, but I understand that the farm and meadow are not included, so the tree is safe from the builder and road-maker for a time; but bricks and mortar are encroaching so steadily on the country hereabouts that it cannot be many years before this farm property is overrun, and then the tree will have to go, unless by a fortunate accident it should happen to fall within the surveyor's plans to include it in one of the gardens, or, much better, retain the whole meadow, with the tree, as an open space.

The photographs here produced will give a better idea of the tree than any amount of description, so I need only add that its height is about sixty-five feet, and the bole diameter at five feet from the ground (*i.e.*, just below where it divides into five great limbs) is three feet six inches (Fig. 242), the greatest spread of foliage being about eighty-five feet. Figs. 243 and 244 are views from the south, and Fig. 242 from the north, the hazy buildings in the background being those of the farm.

The tree flowers and fruits freely in favourable seasons, and it will be seen from the photographs that the leaves (Fig. 241) are very similar to those of the Mountain Ash, but the serrations are much more acute than in that tree. The fruits (Fig. 241) are greenish-brown when ripe and rather smaller than Medlars, so they cannot possibly be mistaken for those of the Mountain Ash. The flowers are shown in Fig. 240.

Besides this noble tree, there is another of the same species growing in the front garden of a house in a neighbouring road, and this is about thirty feet high, has a trunk seven-and-a-half inches in diameter, and also flowers and fruits freely in favourable seasons. *C. Nicholson, 35, The Avenue, Hale End, Chingford, E.4.*

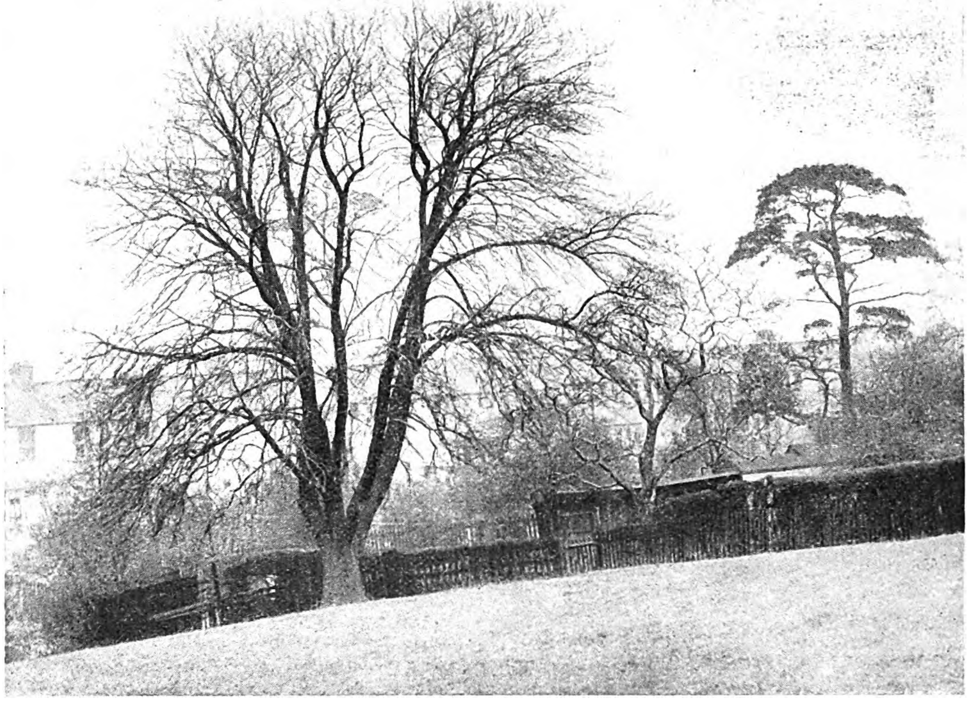


FIG. 243.—THE FINE SERVICE TREE AT HALE END; IN WINTER.

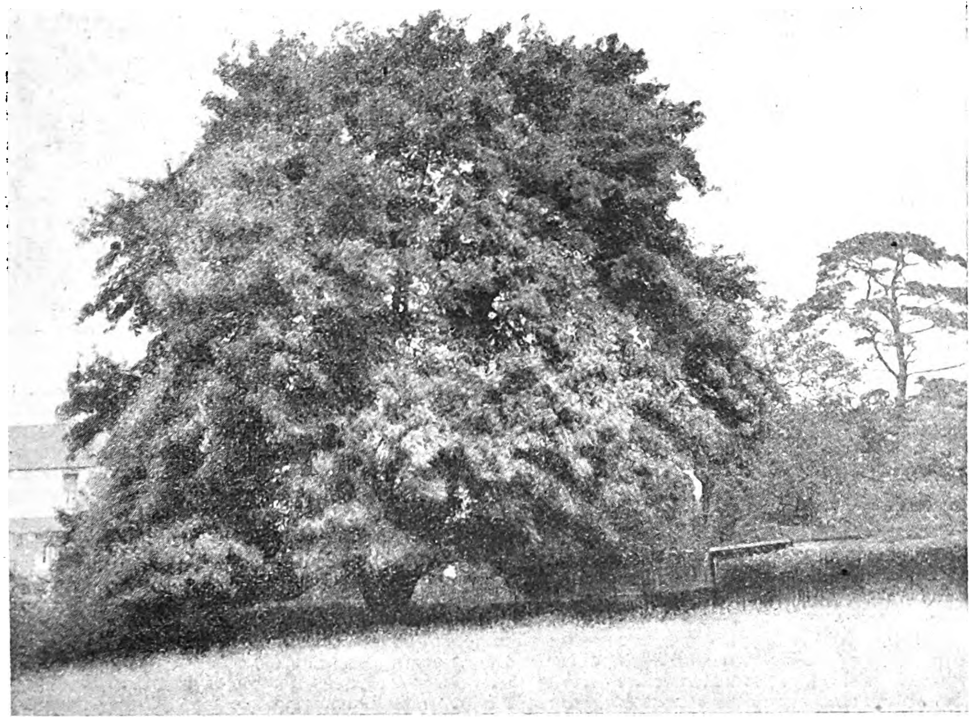


FIG. 244.—THE FINE SERVICE TREE AT HALE END; IN SUMMER.

CLERODENDRON FOETIDUM.

Though cut well back during winter, this handsome Clerodendron is a useful subject for planting against a warm wall. It sends up numerous stout, sparsely-branched growths every year, these reaching three feet or more in height. The growths are clothed with large, handsome, heart-shaped leaves, from three to eight inches in length, coarsely toothed at the margins, and dark-green in colour; the veins on the under-surface are covered with reddish down. The leaves are borne on rather slender, downy petioles, from three inches to five inches in length.

The flowers, produced in closely-packed corymbs early in September, remain effective until destroyed by frost; they are rich purplish-red in colour and sweetly-scented. The specific name has reference to the leaves, which, when crushed, emit a foetid odour. Clerodendron foetidum is easily increased by the removal of the freely-produced suckers. The species was introduced from China by Fortune in 1844. *A. G. F.*

RUBUS GIRALDIANUS.

This is undoubtedly one of the best of several species of Bramble which are rendered conspicuous during the winter time by the colour of their stems. Seen from a little distance, it would appear that they have been whitewashed, but closer inspection shows that the whiteness is really due to a mealy, waxy secretion which covers the bark. It is difficult to imagine a more beautiful winter picture than a group of this Bramble planted in front of a dark background of evergreen. Rubus Giraldianus was introduced to Britain from China about twenty years ago, and has proved equal in all respects to the much better known R. biflorus. R. Giraldianus differs from the latter species in having more arching, pendulous stems, which give to it a more graceful habit, and in having, usually, nine leaflets instead of the three to five leaflets of R. biflorus.

Cultivation presents no difficulties; the best results are obtained when it is accommodated in a good, loamy soil, deeply worked and enriched with a liberal dressing of well-rotted manure. A mulching of manure should be given annually, the aim being to encourage the formation of vigorous growths, as these colour much better in winter than the weaker shoots.

Pruning consists in cutting out the previous year's wood so soon as it has flowered and fruited, thus exposing to view the full beauty of the current year's stems. Pruning is usually carried out in August. *T. H. Everett.*

HIPPOPHAE RHAMNOIDES.

Of the many shrubs advocated for winter effect in the garden, the Sea Buckthorn undoubtedly ranks among the foremost. It is a deciduous shrub, sometimes attaining the dimensions of a tree, and although, as its popular name implies, it is generally to be found near the coast, it nevertheless thrives inland, and is very effective if planted on the margins of ponds or streams.

It is unisexual, and should be planted in groups of five or six, one of which should be a male plant. It is of rather stiff habit, the short, young growths, which are often terminated with sharp spines, being covered with silvery-grey spines, while the narrow, almost sessile leaves are from one inch to three inches in length and tapering at both ends. They are dark, greyish-green above, the scaly undersides being silvery-grey.

The insignificant flowers are produced in April, in clusters, on the growths of the previous season, those of the female plants being followed by a profusion of fruits which are ripe by September and retain their colour throughout the winter. They are rounded, or egg-shaped, rich orange, and although so brilliant are untouched by birds because they are strongly acid.

Hippophaë rhamnoides may be propagated either from seeds or by layering, the latter method being best where the sex of the plants has been determined. *A. G. F.*

PITTOSPORUM TOBIRA.

This sweetly-scented, evergreen shrub was introduced into this country from Japan in 1804. Its white flowers are useful for decorative work, and small plants are suitable for greenhouse and room decoration.

Our specimen grew too large for these uses, also for arranging with the Oranges and similar shrubs out-of-doors during the summer months, so it was planted out several years ago. It has safely weathered the winters, and is now a healthy, vigorous shrub in the pleasure grounds.

The flowers commenced to open on December 7, and at this early date were very effective. The only protection our plant receives is from some large shrubs growing some distance away, which break the cold winds. *G. Emmett, Lydney Park Gardens.*

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BURMESE SPECIES OF MECONOPSIS.

THE garden value of the Poppyworts as a whole is still a moot point. A dozen species —M. Prattii, M. integrifolia, M. latifolia, M. Wallichii and M. Baileyi, for example—have established reputations, but the genus, as a whole, is more popular in literature than in life. But the Poppyworts are, after all, comparatively *nouveaux riches,* and have yet to settle down in public life. Besides, enthusiasts having bowed down and worshipped them blindly, were frankly grieved at their early failure, which was too often a state of suspended animation. Nevertheless, the faithful never cease to proclaim their virtues, and only the most fanatical tories can blind themselves to the fact that in another decade the first dozen will have been raised to the garden peerage, with a second dozen in close support.

Until recently, the Burmese Alps had yielded only three species of Meconopsis, none of them new. The first found, in 1914, was M. Wallichii, var. fusco-purpurea, which I collected in the Hpimaw Hills. It was collected again in 1919, both by Reginald Farrer and myself, in the same general region, when Farrer also collected the tiny, pale-blue M. lyrata. Whether this last has ever been raised from seeds or not is a matter of complete indifference as it is a wretched dwarf. Finally, in October, 1922, when crossing from Yunnan to Hkamti Long, I collected M. impedita, in fruit, above the Taron gorge, just overlapping into Burmese territory; it is widely distributed in western China, but so far has resisted all attempts to domesticate it.

It may be noted that none of the three are exclusively or even typically Burmese; two of them, indeed, rather luckily, spill over into the high frontier mountains which, being the home of the Irrawaddy, we euphemistically call Burma. The third, M. lyrata, is a true Indo-Himalayan alpine, found on the rainy ranges between the snows and the Indo-Malayan jungle down below. In the extreme north of farthest Burma, however, where the wandering threads of the myriad mountain ranges are ravelled up to buttress the Tibetan plateau, the genus shows a quite remarkable expansion; so much so, that in the valley of the Seinghku, in 1926, I collected six species, five of them new to Burma, and I have little doubt there are others awaiting discovery. Of these five species, three are entirely new, the remainder new varieties; bringing the known Burmese Poppyworts up to eight.

July is the time to find the Poppyworts in flower, and not even the most advanced array themselves before the middle of June; consequently, one can glean quite a lot of information about them in the early summer before they flower as either their fruits persist from the previous winter, or their foliage does. But of seeds one can find no trace, as they rid themselves of these very completely at an early date, assisted by troops of ravenous grubs.

Early in June, in the upper Seinghku valley, I marked down three species, two with persistent foliage rosettes, which had survived the winter beneath the snow quilt, the third conspicuous by reason of its capsules. One closely resembled M. Baileyi. The second, with a great rosette of gold and green leaves, suggested M. Wallichii, although the leaves were more closely and deeply cut, and the capsule more like that of M. robusta, so that I expected a new species. The third, judging from the shower of capsules, sang a song of Bellae, and I guessed it to be M. impedita.

After the middle of June, the snow began to melt very fast, and one by one the Poppyworts romped into bloom, the azure Jewel of the Meadow, M. Baileyi, leading the way. Apart from certain technical characters which do not quite fit, this was a meadow form of the peerless, Tibetan M. Baileyi, and I have called it variety pratensis. It might equally well be regarded as a variety of the Chinese M. betonicifolia, being intermediate between the two. M. Baileyi var. pratensis was the commonest kind in the valley, occurring in hundreds between 10,000 and 12,000 feet, on steep alpine meadow slopes, and lasting until the end of July. Petals four. Flowers sky-blue, with trembling, golden anthers, concealing the barrel-shaped, star-crowned ovary in the centre. Height, three feet; polycarpic. This variety should do at least as well as M. Baileyi, and might withstand more sun.

The second species to flower, at the end of June, was the supposed M. impedita, now M. rubra. The first flowering specimens encountered were leaning from crevices in the gneiss cliff at 14,000 feet altitude, a never-to-be-forgotten sight. The foliage was more like that of the dainty, blue-flowered M. bella from Sikkim, but the habit was perfect impedita. To the colour of the flower, however, I at first attached little importance, thinking that I gazed upon a freak; but when ten days later every scree and rubble-chute threw up fountains of blood-red Poppy flowers, no longer could I conceal from myself that I had stumbled upon a prize.

M. rubra may be described as a red-flowered M. impedita with six petals. There are other purely technical distinctions, but the habit is the same in both, though M. rubra, like M. horridula, sometimes tries to build up a central stem of agglutinated scapes. The usual form, however, is a number, often a large number, up to twenty even, of independent one-flowered, basal scapes, not above six or eight inches high. To say that the flowers are red is tame enough, and yet startling. There was no question of freaks; I saw hundreds of plants, and the colour never varied a semitone. When, as often happened on a steep face, a sun shaft, loosed from the cloud rack, drove clean through a flower, it flared up in a jet of scarlet flame. Even on the dankest day, when the reeking valley smoked and dripped forlornly, and the cliffs were blotted out in the driving drizzle, the colour was that of a glowing port-wine-red, which nothing could dim. Towards the middle of July, every stone-chute and gravel-bank between 11,000 and 12,000 feet incandesced with scores of twinkling red lights as a flash of sunshine touched off the flowers. M. punicea, one of the lost causes, has been cited as *the* red Poppywort, but M. rubra has nothing to learn from M. punicea. Unfortunately, M. impedita has been the despair of gardeners in Britain, no less than M. punicea; let us hope that M. rubra will settle down in exile.

At the end of June, I saw M. lyrata on the steep alpine slopes. It is a quaint, anaemic-looking scrap of a plant, scarcely three inches high, bearing one, or sometimes two, nodding, four-petalled flowers of a washy blue; and at first sight it is hard to believe that this pale weakling is closely related to the gorgeously-coloured, pontifical Poppyworts of the 'Grandes' group.

M. lyrata languishes on the turf or gravel slopes above 12,000 feet, and though nowhere abundant, is widespread and moderately common. Sometimes it is completely overshadowed by tall, rank-growing herbs, but generally it favours the open. It is one of those elusive wraiths which one never seems to find in fruit at the spot marked, but which is continually thrusting itself into notice at unexpected places, as though to make amends. The tiny, faded-blue flowers are not attractive, and the species is chiefly of interest for its distribution.

In July, the strange Meconopsis flowered. For days I watched the tall stem drawing out from the thickest crown of leaves, and knew that it was not M. Wallichii, nor yet M. robusta, nor M. paniculata either. And at last the topmost flower swelled till it burst its bonds, and the crumpled petals shook themselves out in fold after fold of shimmering violet crêpe-de-chine; and those below followed fast. Here, indeed, was a stalwart, worthy to rank with the champions of the genus, M. Wallichii, M. paniculata, M. Baileyi and others; and yet, perhaps, not quite, for the colour, though at its best vying with that of M. grandis, say, is just the least little bit unstable. It occasionally fails to keep "that school-girl complexion," and takes on purplish tones; few species in the blue group are altogether immune from that degrading tendency.

M. violacea (K.W.) belongs to the group 'Robustae', and differs from M. Wallichii in having solitary flowers instead of cymules in the axils of the bracts, and from all the other species in its deeply-pinnate, Fern-like leaves. In its first year it produces an enormous crown of pale sea-green leaves encased in golden hairs of silken texture, barbed nevertheless. This leafy crown survives the winter under the snow. A huge, bloated, Carrot—but spongy as a senile Radish inside—plunges down through the loose meadow mould into the stony earth beneath, and the waters under the earth—three or four feet under, firmly anchoring the plant. When the snow has melted, the flowering stem erupts out of the woolly heart, and stretching itself, presently ends in a flower. As yet the stem is only about three feet high, but continuing to grow until checked by the October frosts, it ultimately stands six feet above ground. There are five or six petals of a deep violet colour, with a sheaf of golden anthers bobbing round the bristly, egg-shaped ovary, which is crowned by a long, columnar style. Bracts narrow, drooping; pedicels short, but lengthening and straightening in fruit; capsule large, opening by ten or twelve small canine teeth, exposing a series of narrow slits between the capsular ribs. Thus the whole, in bloom, forms a slim gold and green column of violet flowers, leaning over leafy balconies to nod to the passing insects.

On the Burmese side of the range, M. violacea is fairly common between 10,000 and 13,000 feet, the usual experience being to find a scattered colony of half-a-dozen plants growing on a steep alpine slope, whether gravel or meadow, and no others anywhere near. On the Tibetan side it is a rare plant, and it keeps clear of the limestone. It has the defect of its biennial comrades, and a slight impediment in its complexion, but when the worst has been said, M. violacea is a first-class plant.

Early in July, on the high and steep 'Lapponicum' moorland, at 13,000 feet, I found half-a-dozen plants of a pale, yellow-flowered Meconopsis, which at first sight looked unfamiliar, but which on closer inspection were seen to conform to M. pseudointegrifolia. Its slender gracefulness and chic flowers, however, earned for it the varietal name of gracilis. It was quite a rare plant, and we must have been right on the outer limit of its area. I collected M. pseudointegrifolia in Tibet in 1924, and it is fairly common in Yunnan, extending eastwards and northwards; the variety gracilis comes from an intermediate locality, and is the first yellow Poppy recorded from Burma.

Lastly, there is Meconopsis calciphila. Above 12,000 feet, and commoner on the limestone range, though overlapping also on to the granite, there flowered in July a member of the section Aculeatae. It was a typical, prickly, blue Poppy, with the habit of M. Prattii, that is, a central stem bearing solitary flowers on axillary pedicels, longer or shorter, rarely if ever producing radical, one-flowered scapes in addition. The flower colour was a rather uncertain blue, dark or light, with golden anthers. Its affinities are with the Chinese members of the group, rather than with the Himalayan, since it always has five or six petals—but the leaves are entire. In this last respect it comes nearest to the Tibetan M. Prainiana, but it is not nearly such a tall plant, rarely exceeding eighteen inches, nor has it the prominent, elongated style of M. Prainiana. In the high alpine region it was very abundant, especially on the Tibetan side, where the limestone range was better developed; and its presence there was sufficient proof that the main divide lies almost out of reach of the monsoon. If not entirely confined to the limestone, M. calciphila is much more at home there. Unfortunately, it is not a species of much garden value, more because we already possess several good plants belonging to the group 'Aculeatae' than because of any signal defect in M. calciphila. It just succeeded in being ordinary.

This concludes the list of Burmese Meconopsis as at present known, although I have little doubt there are other species lurking on the dim, distant frontier ranges. Which of them are likely to be successful introductions? Of the above, M. violacea promises best, and M. Baileyi var. pratensis, though less new, ought to succeed. We have ample seedlings of both. No doubt M. rubra is the best of all, and the seeds have germinated; but it is too like M. impedita to allow of optimistic forecasts as to its future. *F. Kingdon Ward.*

THE BERMUDA LILY.

The Bermuda Easter Lily (Lilium longiflorum var. eximium, Baker) first reached Bermuda about 1872, probably from Europe, for it had been known on the Continent for some forty years previously. It is doubtless a native of the Liukiu or Loo-choo Archipelago, a chain of islands stretching from the south of Japan to Formosa, and strikingly similar to Bermuda in their equable though humid climate and calcareous soil. These islands are the native habitat of the Japanese trumpet Lily, Lilium longiflorum, Thunberg, to which the Bermuda Lily is closely related.

The first bulbs to reach Bermuda were grown in gardens in the historic capital, St. Georges, where their vigorous growth and the beauty of their flowers soon attracted attention. Their commercial possibilities were first realised by General Russell Hastings, formerly of Ohio, a retired Civil War veteran, who had made his home at the estate of Soncy, near Hamilton. He collected so many of the bulbs as possible and started the cultivation of Lily bulbs on a large scale. He soon discovered that the soil, temperature and humidity prevailing in Bermuda were admirably suited to its growth.

Entering into agreements with firms in New York and elsewhere, he found the business an extremely profitable one, and it was not long before others followed his lead, and the cultivation of the Lily was undertaken all over the islands.

The present trade name of the Lily, "Lilium Harrisii," was given to it by Mr. W. K. Harris, a well-known grower of Philadelphia, who received bulbs from Bermuda in 1876 from a Mrs. Thomas P. Sargent.

In 1883, the Bermuda Lily first attracted attention in England. A fine spike was exhibited by Mr. G. F. Wilson, of Weybridge, at a meeting of the Royal Horticultural Society and was awarded a First Class Certificate.

Subsequent to that date, the Lily attained great popularity in the United States and in England, as numerous references to it in horticultural journals testify.

About the year 1900, however, a "peculiar sickness" became very prevalent in the Lily fields, and after that date the number of cases exported rapidly declined until before the war they reached a negligible quantity. Recent work carried on at the Department of Agriculture, Bermuda, has shown that the cause of the decline of the industry was one, if not two, virus diseases, strikingly similar to the well-known "degeneration" diseases of Potatos—Leaf-roll and Mosaic. It has been shown that one of these diseases is conveyed from plant to plant by an aphis. The symptoms on the plant are very marked, bringing about an extreme dwarfing of both plant and bulb. The greenhouse-men found that the bulbs produced dwarfed or distorted plants which failed to flower properly, hence they gave up growing the Bermuda bulbs and welcomed the formosums, giganteums and multiflorums, which were coming in large quantities from Japan and the Azores.

After the conclusion of the war, however, the more progressive of the Lily growers in Bermuda made an attempt to resuscitate the industry by the improvement of their types of bulb and by combating disease. On more than one occasion in the past there had been large importations of Japanese Lilies of poor type, and these had become mixed with the Bermuda stocks. It is possible that at the same time

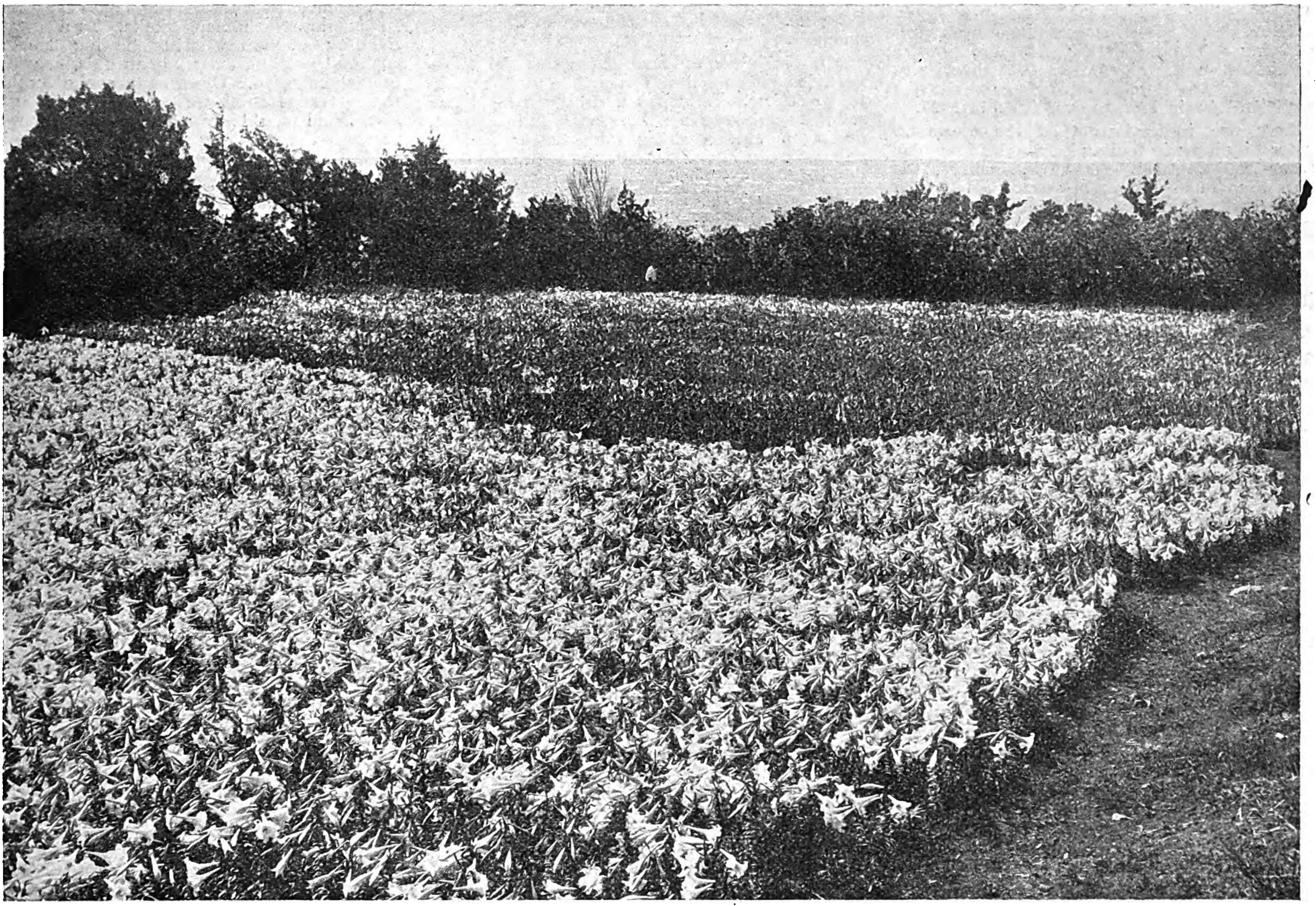

FIG. 245.—A FIELD OF THE BURMUDA LILY, IN BERMUDA.

the virus diseases were introduced, for these have been found in Japanese strains of Lilium longiflorum. The growers, therefore, selected vigorous bulbs of good shape and true to type and propagated vegetatively from these only. By such means they were able to secure remarkably uniform fields in a few years.

The fresh light thrown on the diseases of the Lily by the investigations carried on by th Bermuda Department of Agriculture enabled control measures to be instituted which soon resulted in their practical elimination. For the last three years the fields have been subject to a very careful official inspection which takes place about flowering time and has as its object the elimination of all plants which do not agree with the typical so-called Lilium "Harrisii," or which are in any way diseased or of poor growth. The bulbs are also subjected to a thorough inspection at the packing sheds after they are lifted.

The results of these measures have been very gratifying. The fields (Fig. 245) are now of remarkable uniformity, disease is practically absent, and the number of cases exported has risen from 1,604 in 1922 to over 6,000 in 1927.

There are indications that the Bermuda Easter Lily is again finding its way into popular favour in England. Many testimonials as to its high quality have been received by the Department. Amongst these is a letter, dated April 19, 1927, from Dr. A. W. Hill, Director of Kew Gardens, in which he refers to a display of Lilies grown from Bermuda bulbs in the Kew greenhouses—"The bulbs of the Bermuda Lilies which were sent over to Kew are making a magnificent display of flower. The plants are about five feet high, and each one carries some seven to nine flowers, and they are perfectly healthy and quite the best Lilies we have ever had in cultivation here. We have had them labelled that they came from Bermuda."

The period of growth of the Lily in Bermuda is from October to July. Propagation is entirely by scales and bulbils, mainly the former. The bulbs are usually packed in coral sand but several recent consignments have been made in peat moss. Shipments may be received from August onwards.

The bulbs should be potted up in a rich compost, free from fresh manure, and when the soil has been watered thoroughly they should be placed in a dark, cool place, protected from frost. Under such conditions the bulbs will root readily. When the shoots are about two inches high, the pots should be moved to a greenhouse with a temperature of about 65° to 70°. The plants should receive an abundance of air, and be watered freely on bright mornings. It will require approximately thirteen weeks from the time the plants are brought into the house until flowering time.

The chief distinguishing features of the Bermuda Lily are the abundance and size of the flowers, which are of a pure, glistening white, either horizontal or slightly drooping, and have the perianth segments markedly reflexed. The habit of the plant is pyramidal, the leaves being slightly reflexed and abruptly pointed. The bulbs are of a rich golden-yellow with tapering scales. *Lawrence Ogilvie, M.Sc. (Cantab.), Department of Agriculture, Bermuda.*

CHILI AND THE ANDES.

IV.—On the Way.

It was rather surprising on leaving the intense heat of Panama and running south to the equator, to find that the weather instead of becoming warmer, grew steadily cooler. The whole run south, down the Peruvian and North Chilian coast to Valparaiso, was rather cool and mostly sunless. Even while passing through the tropics one was glad of an overcoat and grateful for a big coal fire in the smoking room.

The climate of this Peruvian and North Chilian coast is governed by the great Humboldt current which, sweeping up from South Polar regions, keeps the temperature low, and reduces rainfall to a minimum. The coast is almost continually overhung by a great grey canopy of cloud, yet droughts of twenty and thirty years' duration are not uncommon in some districts. *i.e.*, complete droughts when not a single shower of rain falls. Except where occasional rivers run down from the Andes this coast belt is utterly barren desert, almost without a vestage of vegetation of any kind. It is curious therefore to reflect that this completely sterile country is, potentially, one of the world's most fertile regions. There are vast deposits of nitrate and there are the Guano Islands. Owing to the dryness of the climate neither of these fertilisers can be used as such on the spot, but, on the contrary, it is due to the dryness that the guano can accumulate, and that the nitrate was not long ago dissolved and washed away. The export of these fertilisers is, of course, an important business.

We put in for an hour or two at the little Peruvian port town of Payta, but were unable to go ashore. It looked a dreary little place set on a narrow, barren shore, with dun-coloured, desert mountains rising immediately behind, and not a sign of vegetation to be seen. Another day's run brought us to Callao, the port town for Lima.

For sheer, shabby beastliness, Callao must surely be hard to beat. We did not, I confess, make a systematic hunt for its beauty spots, but we passed through the town in two directions and the impression gained was of corrugated iron, rusted and corroded; of peeled and blistered paint work half hidden by dust and grime; and dust and dirty paper blowing about the uncleansed streets. So we hurried out to Lima, eight miles, by train. Lima, "City of the Kings," built by the terrible Pizarro, should, with its name and its romantic history, be a far more beautiful and interesting city than it is. But frequent alternate earthquakes and revolutions do not tend to the preservation of ancient historic monuments. Yet Lima is a fine city, with well laid out squares and public gardens and much really splendid street planting. The planting of open spaces in South American towns is altogether admirable, and makes one realise how deplorable is the state of most of London's smaller "open spaces," which are not open at all, but railed in and locked, and hedged with banks of stricken Privet. The beds, for the most part, contain little but rubbishy shrubs and sickly survivals of Victorian bedding, badly done. Almost the only good feature of London's squares is the Plane trees. London's larger parks, Hyde, Regent's, Battersea—have, of course, long been famous for their excellence and magnificence, and every year they seem to gain in beauty and horticultural interest, but a visit to a few South American towns and a study of their lesser public plantings make one realise as never before what a pitiful disgrace many of the London squares are.

We visited the Botanic Gardens at Lima, which combine the functions of public park, botanic gardens and zoo. The botanical interest lay chiefly in the trees, splendid Palms, large specimens of several species of Araucaria—mostly wrongly labelled—gigantic tree Ficuses, Jacarandas, etc.

Late in the afternoon we ran out by car to see the ruins of the ancient Inca city of Pachacamac, a twenty-five-mile run, first through the pretty suburb of Miraflores, where Bougainvilleas were splendid on many of the houses, both the purple sort and a brilliant Indian-red variety, and so on through irrigated agricultural land, Cotton, Maize, Vines, Potatos, etc. Then a brief zone of wild land without irrigation, where a thin, dust-coloured vegetation barely clothed the dun-coloured hills. The last ten or fifteen miles of our journey lay through sheer, unmitigated desert. Here the track lay straight and narrow along a level belt of deep, soft sand. Half-a-mile to our right Pacific breakers thundered dully upon the featureless shore, spouting slowly up in gigantic Mushrooms of white foam. Half-a-mile inland the desert rose abruptly in a range of low, fawn-coloured mountains. So far as the eye could reach there was not a sign of vegetation of any kind, unless some strange, dark patches far up on the hills were colonies of some xerophytic plant. The only sign of life of any kind was a company of a dozen or so pelicans in heavy grotesque flight, wheeling and patrolling in perfect formation up and down the coast.

At one point we passed through a half-mile zone of pungent stench, and found that we were passing—down wind—a guano island which lay some ten or fifteen miles out to sea. At last we came to a little farm oasis, with fruit trees and Palms and Prickly Pears, and just beyond this was the ruined city of Pachacamac. It stands on steeply hilly ground. Its walls of sunbaked mud stand solid and roofless. For an hour or two we wandered and explored, enchanted by this romantic place, tracing its sand-drowned streets, its silent houses, temples and tombs. Quantities of bones lay about, fragments of human skulls, Inca pottery, mummy wrappings still showing traces of coloured pattern, even human hair, coarse and reddish-coloured. One great charm of exploring these strange ruins was that one was utterly alone, and could wander where one would, unworried by any tiresome professional guide.

The ruins of Pachacamac yielded one item of botanical interest, a queer Bromeliaceous plant which sat and lay about on the burning sand, in the great open space of the Temple of the Sun, in the streets, sometimes on the walls, singly or in colonies. It was roughly like the top of a Pineapple, dry and steely-grey, with now and then a flower spike pushing forth, a foot or two high, fleshy, clothed in sheathing, orange scales, and with protruding magenta blossoms. Sitting and lying about is the only way to describe the habit of the plant. It had no roots to speak of, just a few little, inch-long, wiry rootlets, too feebly ineffectual, one would imagine, to act as anchors or feeders. It was not a case of digging the plant up; one just picked it up. Three young ones have been carried about in my baggage for over two months, waiting for a suitable box to travel to England in, and they seem none the worse.

Apparently a few xerophytic species of plants exist in this practically rainless region, being so constructed and adapted that they can absorb enough moisture for their needs from the mists which prevail there.

Our second day in Lima yielded a plant of considerable horticultural promise. We were motoring out to Miraflores, and had stopped to examine some roadside weed—Argemone mexicana, I think it was—when we noticed in a field, fallow after a crop of Maize, hundreds of flowers which looked, superficially, like very large and splendid Sternbergias. The plant grew about twelve to eighteen inches high and the great, leafless, goblet flowers of clear, pure gold were really magnificent. I fancy it belongs to Amaryllidaceae. We had only one trowel between us, but, fortunately, the soil was rich and moist, and the bulbs not deep. We were already late for a luncheon appointment, but for ten minutes we worked like fiends, digging with the trowel, a walking stick and with fingers. We arrived not only desperately late for lunch, but caked with rich, black loam, and our pockets bulging with bulbs and bristling with great golden blossoms. One solitary specimen we found with a splendid orange flower. We dug it up, of course, but the flower got broken off and the bulb mixed with the general stock of C.E. No. 1. Later, we saw a whole field full of nothing but this orange-flowered variety, but we saw it from a motor-bus and it was impossible to stop and collect it.

As we left Callao we made a find, which, if anything could, might make me tone down the hard things I have said of this place. In a bed in a public garden close to the quay we found plants of that splendid orange Cosmea which we had seen, but failed to secure at Panama. The plants, moreover, were carrying ripe seeds, a little of which we were able to steal but—owing to the police, and in view of things we had heard of Peruvian prisons—not very much! *Clarence Elliott.*

IDEAL GARDENS AND PLANT LORE.

The Garden of the Madonna.

(*Continued from page* 491.)

So vast is the number of flowers and plants associated with the name of the Virgin Mary that one finds it difficult to decide how they may best be arranged. One garden-lover would perhaps wish them to be named in the order of blossoming, beginning, we will say, with the Snowdrop and ending with the Christmas Rose. Another would like them set out in relation to the festivals of the Church, such as the Annunciation, Assumption or Conception. For a third, the arrangement which would give greatest pleasure would be the one which represents the wardrobe of Madonna—her nightcap, garters, shoes and stockings, smock, mantle, ruffles and ribands, with such ornaments as signet, eardrops and purse. A fourth would like the plants named alphabetically. Yet another, with a weakness for classification and system, would wish the plants to be arranged according to their botanical orders, beginning with the Ranunculaceae and ending with Grasses and Ferns.

On the whole, the latter appears to be the most satisfactory arrangement, and we will therefore take any well-known British Flora or the *London Catalogue* as the basis, adding or omitting as circumstances may require. Our beds may then be laid out as they are in a botanical garden, their size being adapted to the site and the number of plants devoted to the Virgin which the different Orders contain.

Though not directly named after the Madonna, the Hellebore or Christmas Rose can hardly be omitted, seeing that it is intimately associated with the birthday of her Son, and bears such names as Christ's Bloom, Wort, Flower and Herb. This will be the first flower to greet us, and may therefore well be planted near the bower which is covered with the leafless branches of its nearest relative, the Clematis. The same bed or border will contain specimens of the Wood Anemone, known in the west as Lady's Nightcap; and Adonis Flower or Pheasant's Eye (A. autumnalis), which is known in Würtemberg as Marienröschen, and in Silesia and Swabia as St. Mariablom and Marienröslin. For particulars respecting the plant-lore of this flower we may refer to the papers which have already appeared in these columns. The Columbine is another of the flowers belonging to this Order which has been dedicated to Mary, on account of the peculiar shape of the blossom. In Cornwall it is named Lady's Slipper, in East Anglia Lady's Shoes, while in Germany it is Lady's Glove (Frauenhandschuh), a name which the peasantry of Northants apply to the Bird's-foot Trefoil (Lotus corniculatus).

Many years ago I discovered that the term Lady's Pincushion was used in South Devon for the Yellow Fumitory (Corydalis lutea). If we turn to the dictionaries of plant names, we shall find that several other plants bear this name, including the well-known Thrift, a garden Scabious, a Saxifrage, and the Lungwort (Pulmonaria). The white anthers of the Scabious and the white spots of the Lungwort suggest the name, as does also the tufted, cushiony growth of the Sea Thrift (Armeria). A rock cress (Arabis albida) is known in Lincolnshire as Lady's Cushion.

Thus we come to the Cruciferae, and at once remember the Lady's Smock (Cardamine), a name which is applied also to the Wild Convolvulus, and more rarely to the Arum. This name seems to be absent from German plant lore relating to the Virgin, a fact which suggests that one might profitably compare the popular names of plants in western Europe and Great Britain, with a view to ascertaining what light they throw on the origin or development of different religious systems. Italy is naturally peculiarly rich in Madonna plant lore. We shall find as we proceed that a large proportion of the plants which bear the name of Mary in England are similarly named in many parts of Germany, whilst others are added to our list. Among Crucifers, for example, the Wallflower is known as Mariastengel in Appenzell, though it bears no corresponding name in this country.

Before passing from this Order we must draw attention to another unusual name for the Lady's Smock. In Yorkshire it is called the Lady's Milk Sile. "In the north to *sile* milk is to strain it, and the tin sieve, in form like the wide part of a funnel, is called a *milk-sile*. It is possible that the name of the flower is derived from a fancied resemblance in shape to the milk-strainer." There is, however, another explanation. It is well-known that in popular language the same name is often transferred from one plant to another. Now the Lungwort (Pulmonaria) is in Cheshire known as Lady's Milk Sile, the word *sile* or *soil* meaning in this case a spot or stain. The name thus has reference to the legend which is also associated with the Milk Thistle, that drops of the Virgin's milk fell on the leaves, and in this way caused the white spots which are still seen on their surface.

So far as my memory serves, we have no other plants in this Order for our Madonna Garden, nor do we find any English plant among the Mignonettes, Rock Roses or Violets to place here, though Germany gives the same name to the Sweet Violet as to the Wallflower. We shall need a little space for the family of Pinks (Caryophyllaceae). In Germany the Bladder Campion is Marienrädchen, though not devoted to the Virgin in England. This plant (as well as some of the related forms) is also known as Marienrose, or Röschen, a name which is applied to the Adonis Flower, Sweet Briar, and even to a Verbascum; reminding us of the fact that we call the Mullein, Virgin Mary's Candle and Our Lady's Foxglove. There is a species of Pink (Dianthus deltoides) which we call the Maiden Pink, and the term maiden may in this case be the equivalent of Virgin, seeing that in some parts of Germany the same plant is named both Marientröpfen and Jungfernelke, the latter being the exact equivalent of our own name. The name Lady's Lint is used in Devonshire when speaking of the Stichwort (Stellaria), "probably from the white threads in the centre of the stalks," as Britten suggests. In Germany the terms Jungferngras and Jungfrauengras are applied to the same plant. In Hereford we find the picturesque and suggestive epithet of Lady's White Petticoat.

In Germany the name of the Madonna is intimately associated with the Perforate St. John's Wort. Together with such names as Frauen-Kraut and Unser Frauen Bettstroh (which is our name for Galium) we also find in old records Sunten Marienvlas, or St. Mary's Flax, with a Dutch atmosphere. The Wood-Sorrel (Oxalidaceae) has several names belonging to the Virgin. In Dumfriesshire it is called Lady's Cakes, in Perthshire Lady's Clover, and in Clackmannan Lady's Meat.

The first of the Legumes which claims a place in our list is the Broom. We place it here, not because it bears the name of the Virgin, but on account of its legendary associations. It was the crackling of the seed-pods of the Broom which drew the attention of Herod's soldiers to the spot where the fugitives were hidden, and so drew down upon it the maledictions of the Holy Mother. According to the Bolognese, however, it was the Lupin which performed this ungracious service, and we must therefore place them side by side. We note, however, that Frauenschüchel is a German name for the Broom, and this helps to redeem its character. The Bird's-foot Trefoil which belongs to this Order (Leguminosae) has several names which entitle it to a place here. The German forms include Frauenfingerkraut, Frauenschühl with several dialectical variants, Frauen Schlüssel, and the like. These are matched by the English Lady's Fingers, Lady's Glove, Lady's Slipper and Lady's Shoes and Stockings. The first of these names is also given to other members of the Order, including the Anthyllis, a Vetchling (Lathyrus pratensis), and the Laburnum, while other plants bearing the title will be mentioned in our notice of later Orders. In Germany a Bean is devoted to the Virgin and known as Marienblume, St. Mariabohne and Jungfernbohne. The latter sometimes occurs as Muttergottesstockbohne!

Passing now to the Rosaceae, we find the Dog Rose (Rosa canina) called Mariendorn in east Prussia; another name is Jungfernrose, while the Sweet Briar is Frauendorn, Frauenrose, Mariendorn, Marienrösslein, Marie-hagrose and Maria-windeltrock, to mention no others. It is curious to note that the Bramble is called in Roxburghshire Lady's Garters, a name which is more usually reserved for the striped Ribbon Grass (Phalaris). The Strawberry, as already noted, belongs to the Virgin; mothers should therefore refrain from eating them, since by so doing they rob the rightful owner, and risk the expulsion of their children from heaven; A well-known plant belonging to this Order is the Alchemilla, which bears the name of Our Lady's Mantle on account of the shape of the leaves. The alpine Lady's Mantle is a pleasing addition to the rock garden. In Mexico this name is applied to an Ipomaea, "the azure blossoms of which are four to five inches across, and set so close together that hardly a leaf is to be seen, and the whole plant resembles a blue cloak." The Mexican or Spanish name is Manto de la Virgin. The Germans, like ourselves, devote the Alchemilla to the Madonna, naming it Marienkraut, Marienmantel, Unser Frauen Mantel, Unser lieben Frauen Nachtmantel, with many other variants. It is in certain parts known also as Muttergottesmäntelchen.

The mention of the latter name reminds us that quite a number of plants have been dedicated to the Mother of God, as the Virgin is called in different parts of Germany. Thus we have Muttergottesbettstroh, our Lady's Bestraw (Galium verum); Muttergottesgläschen, not, as with us, for a Campanula, but for the Bindweed (Convolvulus arvensis). A Chrysanthemum (C. tanacetum, Kar.) is the Virgin's Rod or Muttergottesruthe; the Quaking Grass (Briza media), which is called in Cambridgeshire Lady's Hair, is her tears—Muttergottesthränen.

One other plant may be mentioned, because it is not a Madonna Flower with us. This is the pretty Centaury (Erythraea Centaurium, L.) which is named Muttergotteschrut in St. Gallen. Chrut or Crut, as it is sometimes spelt, in old herbals and other works, is the equivalent of *kraut*, a vegetable, herb or plant, so the Centaury is the Virgin Mary's herb. Here we must rest, in the hope of being able to complete the list in our next article. *Hilderic Friend.*

(*To be concluded.*)

MESEMBRYANTHEMUM.

(*Continued from p.* 490.)

12.—GLOTTIPHYLLUM, HAW.

21. G. latum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327 (Fig. 246).—Growths more or less pressed upon the ground. Leaves in two ranks, straight or slightly curved downwards edgeways, those of the smaller form about 1½–2½ inches long, and of the larger form 2½–4½ inches long, 6–9 lines broad and 2–4 lines thick, strap-shaped and of about equal breadth throughout, broadly rounded or subtruncate at the apex, with or without a short mucronate point at the end of the upper edge, flat or nearly so on the face, without any pustule at the base, more or less convex on the back, smooth, glabrous, soft and pulpy, uniformly green, not at all glaucous, shining. Pedicels 3–10 lines long, and in fruit—where left uncovered by the bases of the leaves—up to an inch long, 3-angled, 2½ lines thick, glabrous. Calyx subequally 4-lobed; lobes 4–6 lines long, ovate, obtuse or subacute, three of them acutely keeled on the back. Corolla, 1¾–2½ inches in diameter, expanding only in bright sunshine in the morning and closing in the afternoon, about 5 p.m., not fragrant; petals numerous, in 2 series, 11–13 lines long, ¾–1 line broad, linear, acute, bright yellow, tinged with coppery or reddish on the back at the tips. Stamens very numerous, 3–3½ lines long, bright deep yellow; filaments not bearded. Stigmas 9–10, radiating, 1¼ line long, stoutly plumose, acute, greenish-yellow. Ovary partly superior, convex on the top, 9–10-celled. Capsule broadly obconic, with a raised, dome-shaped top, with 8–10 valves and cells, 6–7 lines in diameter when closed and 10–12 lines in diameter when expanded; valves pallid within; expanding keels dark brown, with pallid, awn-like tips; cell-wings brown; tubercle ochreous. Seeds ½ line in diameter, compressed-ellipsoid, with a small nipple at one end, nearly smooth, being only very minutely tuberculate as seen under a strong lens, brown.

G. obliquum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 336. Mesembryanthemum latum, Haw., *Obs.*, p. 186 (1795). *Misc. Nat.*, p. 32, *Syn. Pl. Succ.*, p. 220, and *Rev. Pl. Succ.*, p. 98, founded upon M. folio linguiformi latiore Dillen., *Hort. Elth.*, p. 236, t. 184, f. 225. M. latum var. breve, Haw., *Rev. Pl. Succ.*, p. 99; N. E. Br., in *Journ. Linn. Soc. Bot.*, Vol. XLV, p. 69. M. linguaeforme, Haw., *Obs.*, p. 182 (1795), *Misc. Nat.*, p. 33, *Syn. Pl. Succ.*, p. 221, and *Rev. Pl. Succ.*, p. 97; *Lodd.*, *Bot. Cab.*, t. 1307, and vars. subcruciatum, prostratum and assurgens, Haw. *Rev. Pl. Succ.*, p. 98. M. linguiforme var. g., Linn. *Sp. Pl.*, ed. 1. p. 488, founded upon M. folio linguiformi angustiore, Dillen. *Hort. Elth.* p. 237, t. 185, f. 226. M. linguiforme var. latum, Salm Dyck, *Mes.*, §8, f. 8B. M. obliquum, Willd., *Sp. Pl.*, Vol. II, p. 1027 (1799), also founded upon f. 226 in Dillen. *Hort Elth.*; N. E. Br. in *Journ. Linn. Soc. Bot.*, Vol. XLV, p. 71. M. medium, Haw., *Suppl. Pl. Succ.*, p. 88 (1819), and *Rev. Pl. Succ.*, p. 95; N. E. Br. in *Journ. Linn. Soc. Bot.*, Vol. XLV., p. 132. M. adscendens, Salm Dyck, *Mes.* §8, f. 4, and perhaps of Haworth, see note below. M. linguiforme vars. adscendens and obliquum, Berger, *Mes. und Port.* p. 241. Probably Ficoides africana acaulos, folius latissimis, etc., Bradley, *History of Succulent Plants*, Decade III, p. 6, f. 24 (1725) should be referred to this species.

Var. cultratum N. E. Br. (Fig. 246 F-G).—Leaves more or less curved downwards, edgeways, with the tips slightly upcurved. Pedicels about an inch long. Corolla about 2 inches in diameter and like that of the type.

G. cultratum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 336. Mesembryanthemum cultratum, Salm Dyck, *Obs. Bot.*, p. 7 (1820) and *Mes.* §8, f. 5; Haw., *Rev. Pl. Succ.*, p. 95. M. depressum, Salm Dyck. *Mes.*, §8, f. 7 (not of Haworth, nor of *Bot. Mag.*, t. 1866). M. linguaeforme, Salm Dyck, *Mes.*, §8, f. 8. M. longum and var. flaccidum, Haw., *Syn. Pl. Succ.* pp. 221-222 (1812), and *Rev., Pl. Succ.*, p. 96, excluding synonymy (but not M. longum of Haw. *Obs.*, 177, which was founded upon a Dillenian plant with ascending leaves, whilst Haworth describes later a plant with leaves pressed upon the ground). M. lucidum, Haw., *Suppl. Pl. Succ.*, p. 89, and *Rev. Pl. Succ.*, p. 95, excluding synonymy, not of Miller. M. longum var. declive, Salm Dyck, *Mes.*, §8, f. 9B, not of Haworth. M. linguiforme, vars. declive, depressum and cultratum, Berger, *Mes. und. Port.*, p. 240.

Riversdale Division: On hills near Riversdale, 700 feet alt.; Muir 3874! 3875! Mossel Bay Division, near the Little Brak River, Burchell. This was in cultivation before 1732.

This species varies considerably, and much confusion of names has been created by Haworth, who first wrongly described it as being M. linguiforme, Linn., and then described various slight forms of it as species and varieties, in which others have followed him. Salm Dyck made further confusion by figuring this species and its variety under several different names. I have again studied all Haworth's descriptions with close attention to detail and compared them with all the drawings and published figures relating to them at Kew, and this comparison, with the aid of living plants and some information about them in their native country received from Dr. J. Muir, has enabled me to alter my former view that G. latum, G. obliquum, and G. cultratum were three distinct species, and also to feel confident that the synonymy as here given is (at least, for the greater part) correct. With reference to M. adscendens, Haw., *Syn. Pl. Succ.*, p. 220 (1812), and *Rev. Pl. Succ.*, p. 96, however, there is some difficulty in understanding what plant Haworth means. His description of it is as follows:—"Leaves ascending, broadly tongue-shaped, very obtuse, green. Flowers pedunculate," and in another description "peduncles longer (than in M. latum)." And he adds, "The leaves are more ascending and paler than in the last (*i.e.*, M. latum), and the peduncles longer. If the next species but three (*i.e.*, M. longum) is not the *M. folio linguiforme longiore* of Dillenius, this may be it; but, if so, he has delineated the leaves too long." This description seems more to accord with G. longum than with G. latum, and in *Rev. Pl. Succ.*, p. 96, he remarks, "Probably a variety of the former" (*i.e.*, M. lucidum, Haw., which is G. longum). There is, however, a drawing at Kew, undated, but probably made somewhere about 1820, labelled "Mesemb. adscendens, Haw.," which represents a plant of G. latum, with leaves spreading near the ground, and is very like that which Salm Dyck has figured as M. adscendens, except that the pedicels and calyx are not represented as being tuberculate, from which character I have no doubt that Salm Dyck's figure §8, f. 4 represents M. latum var. B Haw., *Misc. Nat.*, p. 33=M. latum var. breve, Haw., *Rev. Pl. Succ.*, p. 99. But these tubercles I believe to be due to the attack of some mite; they are not normal plant-tubercles and occur but rarely in my experience. I do not remember to have seen them on a Glottiphyllum, but I have on other genera, where also they are not normal structures.

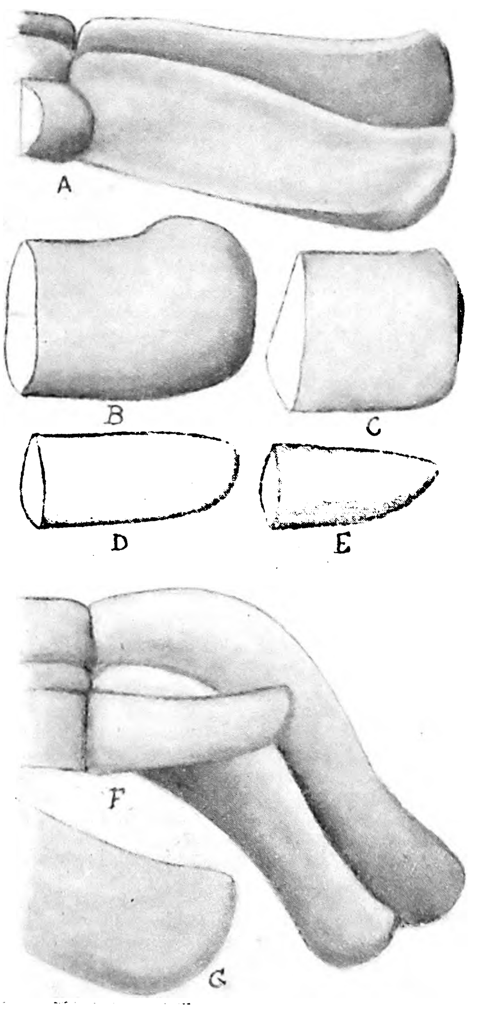

FIG. 246.—GLOTTIPHYLLUM LATUM.

A.—E.—Part of a growth and tips of leaves of the type, natural size. B.—E.—Being from one plant. F.—G.—Part of growth, reduced, and tip of leaf, natural size, of var. cultratum (see text). Flowers pedicellate.

If this drawing at Kew and Salm Dyck's figure are correctly named, then I would suggest that Haworth described M. adscendens from a plant of G. latum that had been grown under glass and not fully exposed to the sun. This view is rendered probable by plants of G. latum that I possess, which, as I write (January, 1927), have ascending leaves, yet when received early in 1926 the leaves were more or less pressed down edgeways near to the ground, not ascending; the alteration to an ascending position being due to the very unfavourable condition of an absence of direct sunlight during the three winter months.

Several plants of this species were sent to me by Dr. J. Muir, some of the smaller and harder type and some of the softer and more juicy form, of which remarks have already been made under the genus. Under the unnatural conditions in which I have to cultivate them, these plants have much altered in appearance, and if placed in the hands of most cultivators of succulents, without knowledge of their origin, would probably be thought to belong to two or three species, or at least varieties. One of them, which, when received, had nearly straight leaves spreading right and left nearly in a line (as in Fig. 246, A), after a time developed leaves curved downward with slightly upcurved tips, exactly as represented by Salm Dyck for M. cultratum. In January, 1927, this put forth a pair of apparently straight leaves, but whether these will remain straight or eventually become curved like the others is at present unknown. This specimen is illustrated by Fig. 246, F. and G., and clearly demonstrates that G. cultratum is not a distinct species, but merely a variation of G. latum, just as I now find that G. obliquum is merely a smaller form of this species, they are merely individual forms of one species, for there is no difference in their flowers. It is strange that Salm Dyck figures this variety cultratum under no less than four different names, for the four figures quoted above under that variety are certainly only individual forms of one plant and might even have been made from the same specimen in different years. The question arises, is this a variation that is due to cultivation and not found in the wild state? For having seen one of my imported plants change under my own eye from the straight-leaved G. latum to the curved-leaved variety cultratum, I wrote to Dr. Muir for information as to whether G. cultratum occurred with G. latum in its native habitat. He very kindly made a journey to the locality where it grows wild, and writes concerning it:—"I examined several hundreds of plants in the localities of my 3874 and 3875. Please note that in nature not one showed any evidence of the cultrate form which is evidently the sybaritic cultivated London or Salm Dyckian form of G. latum." This would seem to be conclusive evidence that the two forms are merely conditional variations of the same individual under cultivation only, and so, for garden purposes, the varietal name cultratum may be retained. If further proof is needed that G. latum and G. cultratum are one species, I may mention that at Kew there is an original drawing dated "Dec. 2, 1823" made from a plant received from Prince Salm Dyck in 1823 under the name of "M. cultratum," which represents the plant as having nearly straight leaves, just as my plant (mentioned above) had when received from South Africa.

Dr. Muir informs me that in their native localities this and other species will "stand frost well. But when they are brought into a garden (meaning in South Africa in the region where they grow wild) and get more water they swell up, become bloated and very luxuriant but invariably blacken and die when frost comes and catches them in this abnormally luxuriant state." This information indicates that these plants should receive very little water during the winter, in Europe, if it is desired to keep the more choice and delicate species alive.

22. G. depressum, N. E. Br., in *The Gardeners' Chronicle*, 1921, Vol. LXX, p. 327 (Fig. 247).—Growths pressed upon or directed towards the ground. Leaves 2-ranked, apparently about 2–2½ inches long and 7–8 lines broad, and of nearly equal breadth throughout, nearly horizontally spreading or slightly sloping downward and slightly curved upwards edgeways at the tips, strap-shaped, obtusely rounded at the apex, with a short point directed forwards at the upper edge, pale green (in the original drawing the green is much paler than in the reproduction of it). Flowers sessile. Calyx unequally 4-lobed; three of the lobes keeled and the keel minutely ciliate. Corolla cup-shaped, 2 inches or more in diameter, expanding in sunshine only, not in cloudy or dull weather; petals in 2 series, acute, yellow, with a red midline and the apex itself frequently red on the back. Stamens short, yellow. Stigmas 10, very short, ovate-lanceolate (probably plumose), incurved, yellowish. Capsule depressed, with 10 ridges on the top and 10 cells.

Mesembryanthemum depressum, Haw., *Misc. Nat.*, p. 33 (1803), *Synop. Pl. Succ.*, p. 221, and *Rev. Pl. Succ.*, p. 99. *Bot. Mag.*, t. 1866, not of Salm Dyck. M. rufescens, Haw, *Syn. P. Succ.*, p. 221 (1812), and *Suppl. Pl. Succ.*, p. 89 (1819). M. longum var. declive, Haw., *Rev. Pl. Succ.*, p. 96 (1821). M. linguaeforme var. rufescens, Haw., *Rev. Pl. Succ.*, p. 98. M. linguiforme var. flaccidum, Berger, *Mes. und Port.*, p. 240.

South Africa: Locality and collector unknown. Cultivated by Haworth in 1795.

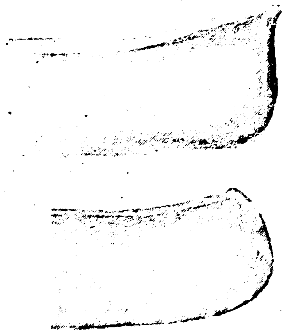

FIG. 247.—GLOTTIPHYLLUM DEPRESSUM.

Apical part of leaves, natural size; adapted from the *Botanical Magazine*. Flowers sessile.

This species is unknown to me, and the above is compiled partly from the original description of Haworth and partly from the figure in the *Botanical Magazine* which accurately agrees with Haworth's description, and from which I have adapted Fig. 247.

Haworth, however (*Rev. Pl. Succ.*, p. 96), wrongly refers the figure in *Bot. Mag.*, t. 1866, to his Mesembryanthemum longum var. flaccidum, which was founded upon a very different species with pedicellate flowers (see G. latum var. cultratum, and under G. longum), and I think it probable that Haworth intended to quote the *Bot. Mag.* figure under M. longum var. declive, which he places after var. flaccidum, and which has sessile flowers and according to description otherwise agrees with G. depressum, but by some accident he entered the quotation in the wrong place.

Haworth also wrongly quotes (*Syn. Pl. Succ.*, p. 221) Fig. 226 of Dillenius, *Hort. Elth.*, as belonging to G. depressum. But the Dillenian Figure has pedicellate flowers and belongs to G. latum, N. E. Br., which see.

I believe M. rufescens, Haw., should be referred to this species. There is no figure of it at Kew, and it is only known from Haworth's description, which in the sessile flowers and other characters stated seems to accord with G. depressum. The rufescent colour of the leaves mentioned by Haworth is not a specific character, but was doubtless due to some cultural cause. *N. E. Brown.*

(*To be continued.*)

THE LAW RELATING TO FIXTURES.

The subject of what may be conveniently termed the law relating to fixtures, is one with which every gardener who hires the land he occupies and every landlord who lets the land is vitally concerned, and one with which they should both be acquainted.

The old general rule with regard to fixtures was that anything which became "fixed to the land," belonged to the owner of the soil, whether he had paid for it and put it up or whether it had been put there or "fixed" at the expense of the tenant or someone else. This rule, as has been pointed out in previous articles, has been so greatly relaxed as to be almost the exception in the case of land occupied and cultivated by certain classes of tenants, such as land occupied and cultivated as a market garden or an allotment or allotment garden. In the case of land not coming under any special statutory provision, as, for example, the Allotments Act of 1922, however, the general rule, in its somewhat modified present form, must be applied, and it is this class of case with which we are about to deal.

Taking the general rule as being that everything fixed to land by the tenant becomes the property of the owner of the soil, we must discover what exceptions to the rule the law now allows, and by what means things placed upon the land by the tenant during the tenancy become fixtures, and what do not.

The first great exception to the general rule that everything affixed to the land by the tenant becomes the property of the landlord, is to be found in what is known as "contrary agreement," that is, if it has been put there—supposing it is a building, or if it has been planted—supposing it is a tree or the like, with the consent of the landlord and under an agreement between the landlord and the tenant, by which the latter is entitled to remove it at the end of the term of his tenancy. This agreement may be found in the lease of the land in question, or it may be a collateral agreement. In any case where it is contemplated making considerable fixtures, such an agreement should, if possible, be obtained for the benefit of the tenant before he goes to any expense in carrying out some improvement to the land which can be considered a fixture.

Apart from agreement, another exception to the general rule occurs where the fixture in question, although it may be standing on the land, cannot be said to be actually *attached* to it. Thus, any structures which are merely resting on the ground or have become embedded in it as a result of their own weight only, will not be considered landlord's fixtures and can be taken away by the tenant whether he has entered into an agreement entitling him to remove buildings he has erected or not. With regard to hurdles and fences it has been held by the Courts that posts and rails put up by a tenant were not fixtures, nor were wood and iron hurdles which were moved about from time to time, although in this case it was said that if they were put up as a *permanent* fence they would be considered fixtures.

Trade Fixtures.

The next exception to the general rules comes under the heading of a "trade fixture," and the rule here is that anything which has been put up on the land by the tenant for the purpose of his trade or agriculture, he is allowed to remove during his tenancy without the consent of the owner of the land. These are generally known as tenant's fixtures, for whereas in the other exceptions there has either been an agreement that the things concerned shall not be considered fixtures at all, or else they are not true fixtures, in this case they are true fixtures, but the law allows the tenant to claim them, even though he has not obtained the consent of his landlord to their removal.

In cases which have been before the Courts on this point, it has been held that a greenhouse and a hothouse erected by a market gardener or a nurseryman for the purpose of his trade, were removable by him as trade fixtures; on the other hand, it has been held that a conservatory which was not built for the purpose of trade, could not be taken away by the tenant as a trade fixture, nor was a tenant allowed to claim a greenhouse in a private garden, or a boiler built into the brickwork of the greenhouse. The pipes of the heating apparatus fixed to the boiler were, however, considered removable.

Apart from buildings, trees and plants may become fixtures and claimable by the landlord at the end of the tenancy, and the strict general rule is that every tree and plant planted by the tenant without any agreement to the contrary and not as a trade fixture, will become the property of the landlord and cannot be removed by the tenant at the expiration of his tenancy. Of course, if he happens to be a nurseryman, he can remove trees and the like planted for the purpose of his trade, just as he could remove a greenhouse erected for a similar purpose.

Lastly, with regard to the actual removal of the fixtures which are claimable by the tenant, apart from any special statutory provisions or special agreements, they must be removed before the expiration of the tenancy. This point should be remembered, since after the termination of the tenancy the tenant has no legal right to go on to the land and take away anything he has left there, unless, of course, he first obtains the consent of the owner of the land to his doing so. *Harold Sharman.*

GLASSHOUSE SANITATION.

Glasshouses, like human habitations, require to be thoroughly cleansed periodically if the health of the occupants is to be maintained at a high standard. This is becoming more than ever a necessity as a result of the rapid spread of red spider (Tetranychus telarius) during the past few years in commercial houses.

It has been clearly demonstrated that this pest may be effectively controlled on Carnations (T. Parker, *Gard. Chron.*, Oct. 23, 1926) by vaporising naphthaline at prescribed concentrations and under certain conditions of temperature, etc. Similar treatment may be applied to certain other glasshouse plants, but with greater risk of damage than in the case of Carnations, which means that this method must be carried out by a careful and observant operator. In spite of this, however, fumigation would still appear to be the most rational method of control, owing to ease of application and economy in time and labour.

Without in any way deprecating the practice of spraying, it must be recognised that it is not the most economical method, because a spray will only kill where it touches, hence the success of such a practice depends upon the thoroughness with which it is applied and the ability to reach the undersides of the foliage. The latter presents great difficulty, especially when treating a house thickly populated with Tomatos. Considerable progress has been made with sprays for controlling red spider, especially with petroleum emulsions. The petroleum must, however, be of a certain gravity and viscosity, and free from certain deleterious compounds containing sulphur. But such emulsions and sprays can only be looked upon as emergency measures, and for obvious reasons should be applied at the first signs of appearance of the pest, before it has had a chance of disseminating itself and becoming firmly established.

Various methods and materials have been suggested for the autumn and spring cleansing of glasshouses, *i.e.*, when empty; but in the writer's opinion they are all defective in one respect, namely, that their application is too long delayed to be of much benefit.

Let us consider the matter from a slightly different angle. Red spider, like certain other insects, hibernate during the winter months, and it would appear feasible to assume that those of an early hatched generation would seek a place of hibernation sooner than those hatched later on in the season.

There would appear to be a massing of the forces prior to seeking shelter, judging from the severity of attacks which generally occurs during August, when the plant's vitality is naturally on the wane. Hence, it logically follows that the best time to attack is prior to the general migration of red spider from the plants, and so prevent them from reaching the cracks and crevices under the ridge boards and other places of shelter, for it is well known that they favour such positions in which to hibernate.

It seems pretty certain that migration takes place so soon as the plants begin to weaken and die off, a condition which is influenced by the prevailing climatic conditions.

In the early autumn of 1926 the writer, in conjunction with Mr. H. I. Kingston, started some tests to ascertain whether the red spider infestation in the subsequent season could be delayed or eliminated altogether by heavily fumigating (with naphthalme vaporised in lamps) the preceding crop prior to pulling it out and while the plants were still green and the spider in an active condition. High concentrations were used and the houses treated during the day time so as to utilise sun-heat and maintain a fairly good internal temperature. These were followed by a fumigation with formaldehyde vaporised in the same way, the object in this instance being to destroy, if possible, spores of Cladosporium fulvum.

An examination of the state of the red spider was carried out prior to and after fumigating with naphthaline, by counting under the microscope, to ascertain the effect of the fumigant. These are shown below :—

NAPHTHALINE FUMIGATIONS.

House.	Red Spider. Before Fumigating.		Red Spider. After Fumigating.	
	Active.	Inactive	Active.	Inactive.
A.	60·7%	39·3%	0%	100%
B.	58·7%	41·3%	0%	100%

In both cases the adult white flies present were killed by the fumigation.

DETAILS OF FUMIGATION.

Naphthaline Concentration per 1,000 cu. ft.	Duration of fumigation.	Temperature.	Size of House.
A. 14·3 ozs.	24 hours.	60–70° F.	36,000 cu. ft.
B. 13·5 „	„	60–70° F.	44,000 „

FORMALDEHYDE FUMIGATIONS.

Concentration per 1,000 cubic feet.	Duration of fumigation.	Temperature.
A. 5 fl. ozs.	24 hours.	60–70° F.
B. 5 „	„	„

The plants appeared to suffer little effects from the fumes of formaldehyde, even young shoots exhibiting no sign of scorching. It was therefore considered that it might be worth while making further trials to find out whether this method could be utilised at low concentrations during the growing stages of the plants, as a means of controlling mildew.

Observations were made periodically during the growing stages of the crops planted in these houses this season. Whilst no counts were made, it was observed that red spider appeared later in the treated houses as compared with others on the same nursery which had received the usual washing down, etc.

Throughout the season the plants were rather weak, but up to the end of October were free from mildew.

Although no definite claims can be made on a one-season's trial, the results are of sufficient interest to make it worth while to repeat the trial on a much larger scale, and, in any case, this new method would be much cheaper than washing down with emulsified cresylic acid, which involves much time and labour.

A series of fumigations carried out with formaldehyde, using a concentration of ten and twenty fluid ounces per 1,000 cubic feet, produced little effect upon adult white fly or red spider, but naphthaline gave one hundred per cent. kill of adult fly and appeared to have had some effect upon the nymph stage; caterpillars also seem unable to withstand the fumes of this material.

In applying this method of fumigating to commercial conditions, and in order to obtain the best results, it would appear desirable to fumigate in September or early October; this would mean "bench ripening" the remainder of the crop, and would probably be compensated for by a longer period of freedom from troubles during the subsequent season.

As most of the "washing down" with such materials as emulsified cresylic acid is carried out during November and December, when, in all probability, the red spiders have reached their winter quarters, it is not to be wondered at that very little good accrues from such treatment, for in spite of this annual "washing day," red spider appears in as great numbers as before.

It is very questionable whether burning sulphur is of much avail, although there are still many growers who adhere to this old practice. Because the fumes of burning sulphur irritate the nose, eyes and throat of human beings it does not necessarily follow that they produce any effect upon red spider.

"Tear gas" has been used for end-of-season fumigations, but the concentration that must be maintained to destroy red spider, or its eggs, makes the operation a most unpleasant one, with a certain amount of danger to the person applying it. The system of sprinkling this material on to the soil is to be deprecated, as the soil is likely to retain it for a considerable period with consequent disastrous results to the seedlings at planting-out time. *Theodore Parker.*

DISEASES AND PESTS OF CELERY IN 1927.

During the year now closing, Celery has suffered considerably from various causes in different parts of the country. The cold, wet season, no doubt, helped to produce indifferent results, but cultural details have also played their part in assisting the various organisms to obtain a firm hold upon their host, with the result that the value of the crop has been reduced. No attempt is made in this article to denote which disease or pest has done the most damage, because the damage and organism have varied in different parts of the country, but an attempt is made to record the diseases and pests seen, and to correlate the effect of weather and cultural operations upon the organisms concerned.

The writer has had the privilege of examining damaged specimens of Celery plants from many parts of the country and from these specimens it appears that the damage falls into four groups, namely :—(1) Leaf Blight; (2) Carrot Fly; (3) Soft Rot; (4) Pithy sticks. Average crops have been obtained in gardens where the above troubles were absent, showing that the weather is not wholly to blame, but in gardens where one of the organisms has been present it seems as though bad weather, plus the organism, has operated against the plants, and poor crops resulted.

Leaf Blight (Septoria apii, Bri. and Cad.)

This disease has taken a large toll in many widely separated parts of the country; it appeared early in the season and when no effort was made to control it, was troublesome throughout the season. Recently,* *The Gardeners' Chronicle* has called attention to this trouble when research work on the subject of Celery leaf blight was reviewed. The disease may appear at any stage in the life of a Celery plant, and it seems reasonable to suppose that when the disease appears in the seedling stage contaminated seed was the probable cause. On the other hand, when the disease did not appear until the plants were placed in their final quarters, contamination may have been caused by diseased crop remains, present in the soil or manure.

When there is much disease present in the seedling stage it points to a heavy attack on the parent seed plants during the previous season, and not necessarily to the effect of the weather factor after germination. There appears to be some evidence that a slow growing season assists the disease to make rapid headway, but the writer would rather trust to preventive spraying than blame the weather conditions for a crop failure. It appears from the article noted above that this disease is present in most packets of seeds, and if so, some early method of control is essential.

Carrot Fly (Psila rosae, F.).

It is only within recent years that this pest has been noticed as using Celery as a host plant, but the writer is of the opinion that this was due to the fact that previously the damage to Celery was either overlooked or more probably put down to other causes. In any case, the damage to Celery by Carrot fly during 1927 has been unusually severe. The pest was very common on its normal host so that a bad attack on Celery was, perhaps, only to be expected. As to why Carrot fly should have been so prevalent during 1927 is a difficult question to answer, but it seems doubtful if weather conditions had much to do with it. The writer has noticed that when Carrot fly is common, Carrot aphis is common too, and he has thought that there might be a connection between the two. Research workers have recorded that the Carrot fly is very fond of sweet substances, and it appears likely that the Carrot fly feeds upon the honey dew excreted by the Carrot aphis. The effect of Carrot fly on Celery is that the maggots' tunnel in the outer leaf stalks and produce rusty marks in the positions attacked. If the attack has been bad, the Celery, when earthed up, rots, because soil organisms enter the wounded tissues and ordinary putrefaction is set up. A bad attack of Carrot fly is nearly always followed by a rotting of the plants from the outside towards the centre.

Soft Rot (Bacillus carotovorus, Jones).

Many cases of this rot have been received, and it would appear that season and culture have helped the organism. It may be only coincidence, but in all cases examined the plants attacked have been running to seed. In some instances the "bolting" was very pronounced, in others only just noticeable. We know very little about the cause of "bolting," but it is generally accepted that a bad season, or a check due to bad culture, assists in making Celery bolt. From the specimens examined during 1927, the writer is of the opinion that soft rot is likely to attack a plant running to "seed" after earthing. Soft rot is a difficult trouble to control because it attacks many of our crops in widely separated Orders. Diseased plants should be burned and a good rotation adopted. Watering a Celery trench with a solution of permanganate of potash helps to give the plants a good send off in their fight against soft rot. The treatment should be given before the plants are put into the trenches. It should be noticed that when soft rot occurs the rot commences in the centres of the plants and works outwards.

Pithy Sticks.

The cause of this trouble is unknown. Several cases have been examined wherein every part of the plant has been woolly and useless. It appears likely that culture and not season is the cause of this trouble. In one case the owner admits selecting three dozen plants, placing them in specially prepared trenches, and feeding liberally to produce sticks for exhibition purposes. The rest of the plants were grown as an ordinary crop. Every one of the three dozen plants selected for exhibition were pithy when lifted; not one pithy specimen was found in the crop grown under ordinary garden conditions.

In another case the owner stated that he had been growing the Celery for exhibition and had grown it well, the sticks looked perfect until lifted, and then they were found to be pithy. This evidence is certainly very slender; but it does seem that over feeding, or perhaps unbalanced feeding, can cause this trouble.

Pithy sticks are often to be found amongst commercially grown Celery, especially if quick-acting, nitrogenous manures have been used in excess.

It is interesting to note that one pest of Celery which is often troublesome has behaved remarkably well this season, namely Celery fly (Acidia heraclei, L.). The writer has seen very little of this pest, and no reports of damage have been received. *Somerset.*

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* *Gard. Chron.*, August 6, 1927, p. 101.

FRUITS IN 1927.

Each season brings with it its peculiar problems and, if we are wise, teaches its lessons. The fruits of the past year have been far from successful. That which survived the disastrous spring frosts came tardily to ripeness, and when they reached the dessert table were found sadly lacking in flavour. As was natural, the mid-season Apples and Pears suffered less, but when we came to our Cox's Orange Pippin, Blenheim Pippin, Ribston Pippin, and all the delightful family of Reinettes and Russets, we found them deprived of their usual flavour, the autumnal ripening having been lacking for want of sunshine.

It would seem at first glance that this is a stroke of fate which we cannot avoid, short of the futurist visions of supplemental electric rays. But perhaps we may mitigate in some degree the worst effects of a sunless year by treating the ripening of our fruits by another method, namely, the stopping of late autumnal growth always induced by a wet season. The ideal fruit-ripening climate is one of considerable autumn drought, absence of rain in August and September having an extraordinary effect upon the quality of fruit; who will forget the Cox's Orange Pippins of the vintage year of 1921, a year equally good for Pears and Grapes.

In my nursery this year the best finished Apples were from cordons on the Doucin Ameliorée stock, which has the character of stopping growth earlier than some of the other Paradise stocks and thus causing a premature autumn to the fruit. These cordons were also on a very dry and light soil where fruits always ripen early on whatever stock it may be.

The higher colour of Apples from such sandy, well-drained soils is well-known, and from this it would seem that a dry soil has an influence which might help to mitigate the loss of sunshine.

Some of the old gardeners recommended the use of boards to throw off the rains from the roots of Apricot trees and so provide a dry autumnal root-run such as the Apricot loves.

I have never seen this idea adopted or recommended for other fruit trees, but it would seem worth a trial, and a few sheets of corrugated iron suggest themselves as convenient material.

Most discoveries in horticulture are really re-discoveries, and perhaps one of our successful exhibitors has long been using this method. An extension of the experiment, if such it be, might be made to provide a dry soil in May, a month of vital importance to the fruit crops of the following year.

Most fruit growers will have noticed that there is a good set of fruit buds on Apples this year, and it was evident in June that this would be so, notwithstanding a good crop of fruits already set.

This, I imagine, was due to the dry weather of May, which tended to keep the young spurs from growing, and led to the formation of the desirable, terminal fruit bud rather than of the leafy lateral.

The creation of an artificial spring drought might, perhaps, have the same effect, and it would be worth trying on trees with a limited root-system, such as cordons and small bushes, or upon wall trees where the roots are in a limited space. *E. A. Bunyard.*

FRUIT GARDEN.

APPLE LAXTON'S SUPERB.

In view of the prominence given recently to Apple Laxton's Superb, and the opinion held by many of the best fruit-growers that it may eventually prove to be the Apple everyone has been looking for to follow Cox's Orange Pippin, the following particulars of a tree which I saw growing in a garden in Berkshire in September last may be of interest.

The tree in question was carrying a splendid crop of good-sized and fairly well-coloured fruits, and looked extremely healthy. The owner, a farmer, is particularly keen on fruit-growing, keeps fairly up-to-date with new varieties, and does not hesitate to discard a variety which is not to his liking, or to head back the offending tree and regraft it with another sort.

This latter fate befell a tree purchased in 1911 as Alfriston, but about which he said "If Alfriston is a respectable Apple, this certainly was not, as it was a small, hard, green Apple of no use at all."

"Small" does not suggest Alfriston, but the colour does; whether the tree was true to name is therefore not certain.

Laxton's Superb was the variety chosen to work on the headed-back branches. The grafts were put on in the spring of 1923 and have in the meantime grown and made a good tree.

The total weight of the crop gathered this year was 65 lbs., which may be considered an excellent result, and proves the cropping capabilities of the variety. It also indicates, assuming the original tree to be Alfriston, that Laxton's Superb "takes well" on it. *A. J. Cobb, Reading.*

THE MIRABELLE.

The Mirabelle is well-known to all travellers in France as the fruit from which a delicious preserve is made, and to some as a liqueur of somewhat pungent quality.

It is specially grown in the regions of Metz and Nancy, and the names of these towns are often attached to it.

Of its early history little seems to be known, it has, like so many of the good things of France, been "taken for granted" that it is a native fruit. The first record I have found is in Duhamel du Monceau's *Arbres Fruitiers*, published in 1768.

German authors seem to have received it rather later, but the writers of the nineteenth century, such as Overdieck, Dittrich Hinkert, etc., all call it "Gelbe Mirabelle," so it probably came to them from France.

It is a small, golden-yellow fruit, thickly dotted with crimson-red spots, and the ripe fruits look as good as they taste. It needs, however, a touch of fire to develop its finest qualities, and it is in the jam pot that it attains its apotheosis.

Like most popular fruits, it has, in the course of its life, developed several "forms," or sub-varieties, and the large-fruited one known as the Grosse Mirabelle can be recommended as having attained size without the loss of quality.

It will grow to a moderate-sized tree, being bushy in habit.

Any gardener who wishes to obtain the good-will of the housewife should certainly try this most ready means of doing so. *E. A. Bunyard.*

FRUIT REGISTER.

PEAR ROUSE LENCH.

This old Pear is found in gardens in the west and midlands, and whilst not in any way comparable to Josephine de Malines and other late varieties, well-matured fruits are quite good.

The fruit is large, pyriform, uneven and undulating; skin pale green, turning to pale yellow, with bright russet markings, when ripe. The eye is large and open, reminiscent of Jargonelle; the flesh is yellow, juicy and of good flavour in January and February.

This variety was raised by Mr. T. A. Knight, the name being derived from the village or estate of Rouse Lench, near Evesham. The tree is excellent in bush or pyramid form. *Ralph E. Arnold.*

[Dr. Hogg (*The Fruit Manual*) describes the flesh of Pear Rouse Lench as "yellow, buttery, juicy, sugary, and pretty good flavour."—Eds.]

VEGETABLE GARDEN.

RHUBARB.

Rhubarb is an accommodating subject and, consequently, is often neglected. The best crops are produced on deep, alluvial soil, but good results follow on almost any kind of soil that has been heavily manured. The situation chosen for growing Rhubarb should be sheltered from east winds, but remote from trees. If the ground has been trenched and manured during the winter a dressing of bone-meal forked into the surface before planting in the spring will have a very beneficial effect upon growth.

Strong-growing varieties require a distance of three feet apart each way. The less robust kinds, as well as roots intended for forcing, may be planted from two to two-and-a-half feet apart, according to the variety. Stalks should not be pulled during the first season.

Old plantations should be kept clean and have some well-rotted manure forked into the soil during the autumn. Such plantations will continue to yield well for several seasons, but it is advisable to make a new one every third or fourth year.

Rhubarb may be raised from seeds, and a large stock is quickly secured by this means. Seeds sown in boxes filled with good soil during March or April germinate freely if the boxes are placed in a cool house or frame. The seedlings may be pricked out into boxes, or on a bed under a frame, and planted out during May or June.

Rhubarb is easily forced in any structure where a temperature of from 55° to 65° is maintained. Darkness is essential in producing stalks of good quality. Forcing may commence in November, and be continued until the outdoor crop is ready for use. Early varieties in the open ground may be forced by covering the roots with pots or boxes and surrounding these with litter and leaves.

There are many varieties of Rhubarb. Glaskin's Perpetual is a precocious sort, which produces stalks of good quality during the first season from seed, if grown in rich soil and given protection during severe weather; it will also continue in bearing for a long period. Stalks of the Sutton Rhubarb are large and tender, and of a rich, bright red colour. Hawke's Champagne is a superior, early variety, producing very long, straight, good-sized stalks of a bright red colour and of distinct flavour when cooked. Elford is excellent for forcing; the stalks are rather slender and retain their bright red colour when cooked. Myatt's Victoria is excellent for late use, producing long, thick, rich crimson stalks of good quality. *C. Ruse.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*

Birds and Fruit.—One important aspect of the subject of the havoc wrought amongst choice fruit this season by blue-tits seems not to have been touched upon by any of your numerous correspondents. I refer to the fact that these exceptionally severe attacks are of distinctly periodic occurrence. I have observed this to be the case over a period of twenty years, during which I have been an exhibitor of hardy fruits at the R.H.S. shows. I experienced similar trouble with tits, once in every few years, at Bessborough, in southern Ireland, and the same periodic rule seems to apply here in Sussex. This is my fourth summer here, and it is the first season during which I have had serious trouble from tits; indeed, I have experienced the worst visitation ever known to me, notwithstanding the usual safeguards. The trees were netted early in August. We then enclosed upwards of two hundred of the best fruits in hexagon bags, but not more than one in ten of these escaped the tits. The usual excuse one gets from the uninformed bird-lover is that birds only attack fruits when they are thirsty, and the remedy is a supply of bird baths, pans of water, etc. My answer is, that during the unusually wet and cool month of August last, we lost thousands of beautiful Pears and Apples, through damage done to them by tits. It may well be that during this miserably cold, wet summer, some of the more usual food of these birds was lacking, but there was no lack of moisture. I was sorry to read in Mr. Durham's observation that paper bags proved useless also, as I had intended using these next season, instead of the hexagon material, which was so easily pecked through. One rather amusing aspect of the matter was that these birds develop enough intelligence to know that hexagon bags usually contained something extra good; so much so, indeed, that fruits of hard, green Apples, such as Lord Derby, enclosed in bags, were pecked, whilst exposed fruits on the same trees were left untouched. *T. E. Tomalin, Stanstead Park Gardens, Emsworth.*

—— On the subject of the blue-tit and damage to fruits, Mr. H. E. Durham has the temerity to endeavour to overthrow the researches of Mr. Collinge. I put it that way because there happens to be this vast difference between these two gentlemen: Mr. Durham is obviously deeply prejudiced, and regards the blue-tit solely from the point of view of his lonely dessert table; Mr. Collinge is entirely unmoved by any sort of prejudice, the one wholly impartial authority for whom we have all been looking these many years who can convince us with facts that none can doubt as to the amount of good done by this bird or that. Now, is the man of average intelligence who desires a sound verdict on such matters to heed Mr. Durham or Mr. Collinge? We are all liable to squeal about our little personal hurts. Mr. Durham had only one Doyenné du Comice Pear on his table. That is obviously a tragedy of the first magnitude to Mr. Durham because it reminded him of the absence of the remaining seventeen Pears! But are all the tits of his locality to be condemned on that account? I am afraid it takes more than Pears, even Doyenné du Comice Pears, to make a world, and Mr. Durham must learn to "live and let live." His simile of the fox fails as an argument because it is false in its application, and I will invite him to take from me an illustration a little nearer the mark. A single stoat in my garden will keep it entirely free from voles and mice, which swarm when the stoat is absent. That stoat is killed by my neighbour's keeper because it takes a pheasant's egg. The keeper would extirpate every stoat just as Mr. Durham would extirpate every blue-tit, each acting purely and selfishly in his own narrow interests. Everyone else who may happen to derive great help from those creatures may go to the place where the worm never dies. That sort of thing will not do. The community has the prior claim, the larger voice. I am both a gardener and a lover of most birds. Once, as a market gardener and fruit grower, I suffered from the latter as much as anyone. But I hope I have always been sane enough to regard this matter with both eyes open and some measure of fair judgment. Mr. Durham, in his efforts to blacken the blue-tit's character, has simply disclosed his own. "My garden" and "my crop" are all he sees, thinks or cares about. But it so happens that there are a few other people in the world besides himself, people unbiassed enough to view the matter in the light of common justice and common sense. *A. T. Johnson.*

Celastrus articulatus.—I have read with much interest the appreciative notes on Celastrus articulatus on page 484, and would like to express concurrence with all that your correspondent writes in its favour. It is exceedingly attractive when in fruit, and cut branches bearing these fruits look remarkably ornamental. The only point to be made against its more general introduction to gardens is that of its vigorous habit, which is mentioned by your correspondent. It must be planted with judgment, as its twisting branches would strangle some subjects which were too near. The positions suggested in your contributor's notes seem ideal for the purpose. *S. A.*

SOCIETIES.

GUILDFORD AND DISTRICT GARDENERS'.

Lord Macaulay, in his essay on Milton, has a sentence which very well fits the lecture delivered by Mr. A. E. Burgess, at Guildford, on December 6.—

> "Every generation enjoys the use of a vast hoard bequeathed to it by antiquity, and transmits that hoard, augmented by fresh acquisitions, to future ages."

Whatever of truth there may have been in this statement relative to the matter upon which Macaulay was writing at the time, one could but feel it was certainly true of "The Apple." Mr. Burgess began his lecture on "The Making of an Apple Tree," with a backward glance, and said it had taken hundreds of years, and hundreds of people to make the Apple—and to bring it to its present stage, which, however, is still far from perfect. There is work and scope for other men in future years to produce the perfect Apple. Instances were given to prove that the Apple was in cultivation four thousand years ago. The English Pearmain is the oldest variety known to us, but The Lady Apple of to-day is exactly the same Apple as was known to the Romans. Mr. Burgess thought that the original Apple was the Crab, still found along the hedge-rows, and that the early improved varieties were chance seedlings. He then went on to speak of the work and experiments of Mr. Knight, Mr. Thomas Laxton and Mr. Charles Ross, and from this point passed under review various methods of propagation, by budding and grafting with special mention of the experiments carried out at East Malling. The proper methods of budding and grafting were demonstrated, and the correct method of pruning was illustrated by some excellent diagrams prepared by Mr. Middleton, also of the Surrey Council, who accompanied the lecturer. The French system of pruning adopted by M. Lorette was also brought under review.

The President, Alderman W. T. Patrick, J.P., expressed warm thanks to Mr. Burgess for his very informing and interesting lecture, and to Mr. Middleton for his part in it.

An extremely good collection of Apples, and other produce had been brought by members to whom Certificates were awarded.

TAUNTON AND DISTRICT CHRYSANTHEMUM AND FRUIT.

The new departure of the above Society in holding a two-days show this year was fully justified by an increased number of exhibits and a large attendance. The County Territorial Hall at Taunton was found to be too small and some of the sections were placed in a tent adjoining the hall.

The Society is fortunate in its officials, for the President, Lt.-Col. A. Hamilton Gault, D.S.O., and his lady, take a practical interest in the Society and its doings, while the secretarial work is most ably carried out by Mr. W. H. Loosemore.

The President's Cup, which is offered for the best group of Japanese Chrysanthemums, was awarded to Mr. Guy Turner for a tastefully arranged collection of well-grown plants. Mr. Turner also won four first prizes for specimen Chrysanthemum plants of the different types, and also won first prizes with four plants of Salvia splendens and with six Begonias. There were two large groups of Single Chrysanthemums, and the first prize was won by Mr. G. U. Farrant with an admirable display, while Mr. Guy Turner was a good second. The best display of cut blooms was arranged by Mr. Douglas Reed.

In the open classes for exhibition blooms, Messrs. James Webber and Sons were the most successful exhibitors, for they won seven first prizes, including two Silver Cups, three second prizes and, with a magnificent bloom of R. C. Pulling, the Gold Medal offered for the best bloom in the show. In each of the two principal classes the Lady Abbess, Franciscan Convent, Taunton, was a very close second. Alderman F. W. Penny was a very successful exhibitor in the amateurs' classes and won the Challenge Cup offered for the highest aggregate of points.

The Decorative Classes were very successful. There were seven exhibits of dinner-table decorations and many bowls, vases, baskets and bouquets of Chrysanthemums. Miss E. Dobbs and Miss E. B. Ellis were the most successful exhibitors.

Decorative displays of fruits and flowers were an attractive feature of the show. The Gold Medal for the best display on a fifteen feet run of tabling was won by Mr. A. J. Groves, Chantry Gardens, Taunton. In the classes for single dishes of fruits there were over two hundred dishes of Apples, while the entries for other fruits and vegetables were also very numerous, and the quality reached a high standard of excellence.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting, held on Friday, December 16, the members of Committee present were:—Mr. J. B. Adamson (in the chair), Mr. A. Burns, Mr. B. Collins, Mr. A. Coningsby, Mr. J. Evans, Mr. A. Keeling, Mr. G. V. Llewelyn, Mr. D. McLeod and Mr. H. Arthur (Secretary).

First Class Certificate.

Laelia Schroderae var. Sunray.—A large, well-formed flower with pure white sepals and petals and a large lip that has a deep band of velvety crimson. From J. B. Adamson, Esq.

Awards of Merit.

Cypripedium Pyramus var. The Premier; C. Montcalm, Townley Grove var.; C. Pliny var. magnificum; C. Memoria F. M. Ogilvie var. Imperator; C. Alcivarna var. Radiant; C. Bisham var. giganteum; C. Everest (Hestia × Swintonense); C. Olympus var. Invincible; C. Luna (Desdemona × Mrs. Carey Batten) and *Laelio-Cattleya Asprey (Aphrodite × C. Dowiana)*. All from J. B. Adamson, Esq.

Cymbidium Doris var. Ajax; C. Moira var. Livid; and *Odontoglossum L. R. Harrow.*—From The Hon. G. E. Vestey.

Potinara Amalthea (Brasso-Cattleya Digbyano-Mendelii × Sophro-Laelio-Cattleya Marathon) and *Lycaste Skinneri var. Hecate.*—From Mrs. Bruce and Miss Wrigley.

Cypripedium Mrs. Ethel Rhodes (parentage unknown).—From G. V. Llewelyn, Esq.

Awards of Appreciation.

To Cypripedium Rhoda A. Llewelyn (parentage unknown), and C. Southport Gem (Mulatto × Druryii).—From G. V. Llewelyn, Esq.

Cultural Certificate.

To Mr. J. Howes for Laelio-Cattleya Schröderae.

Groups.

J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded. This included Cypripediums already enumerated in the awards, and, in addition, C. Christopher bisepalum, C. Stamperland, C. Warrior, Green's var., C. Alabaster, C. Corsair, Holford's var., C. Charlotte Dillon, C. The Prince, C. Elatior, C. Leeanum var. J. Gurney Fowler, and Odontoglossum J. H. Knight, O. amabile splendens and O. Humeanum.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were also awarded a Gold Medal for a group containing Cypripedium Invincible, C. Boag, C. Troilus var. Impregnable, C. Eboriacum, C. The God Pan, C. Queen Mab var. Fairy; Lycaste Skinneri var. Hecate, L. S. delicatissima, Sophro-Laelio-Cattleya Osmondii and Masdevallia tovarensis.

Mr. John Evans, Colwyn Bay, was awarded a Large Silver-gilt Medal for a group in which were well-flowered plants of Vanda caerulea, Odontoglossum crispum in variety; Odontioda Diana; Oncidium tigrinum and Cypripediums in variety.

Captain W. Horridge, Bury (gr. Mr. A. Coningsby), exhibited Cypripedium Aeson, Bolholt var., C. Louvain, C. Swallow, C. Rosettii and Miltonia Wm. Pitt.

Messrs. Keeling and Sons showed Cypripedium Chrysostum, C. Golden Fleece, C. Pyramus, C. Carola and C. Nesta. Mr. D. McLeod also showed Cypripediums.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held in the R.H.S. Hall, on Monday, December 12, when Mr. T. R. Butler presided. Eight new members were elected. Four members withdrew interest from their deposit accounts, the total amounting to £14 12s. 2d., while three members over the age of seventy years withdrew from their deposit accounts sums amounting to £18 15s. 5d. The nominee of one deceased member received £29 15s. 10d. The sick-pay for the month on the Ordinary side came to £87 2s. 2d., and on the State section to £72 16s. 8d.; maternity claims totalled £7 10s. 0d. Grants from the State section, amounting to £34 8s. 0d., were made to nine members for dental and surgical treatment; nine other cases were considered.

TRADE NOTE.

The many friends of Mr. Alfred Gray, who is connected with the firm of James Gray, Horticultural Builders, Chelsea, will be pleased to learn that he has now entirely recovered from his recent indisposition.

Obituary.

John Birch.—The death of Mr. J. Birch occurred at Styche Hall Gardens, on the 11th inst., after a short illness. Mr. Birch was sixty-three years of age and a well-known Shropshire gardener. He spent his early years at Tedsmore, West Felton, and when quite a young man went to Shotton Hall, the seat of the late Marquis of Cambridge, where he took an important part in laying out the gardens. Later, he became gardener and bailiff to the late Lady Mary Herbert of Styche, at Styche Hall, and held that position for the past twenty years. Mr. Birch was a keen and enthusiastic gardener, devoted to duty and a thorough believer in "what is worth doing at all is worth doing well." He was a man of singularly happy disposition, deeply respected by his employer and all those who came in contact with him. He led a most active life, and was an annual and successful exhibitor at the great Shrewsbury Show, and one of the oldest members of Committee of that exhibition, having been elected in 1899. His cheery personality was well known to exhibitors and judges, as he himself judged in the cottagers' section for nearly thirty years. Mr. Birch was a member of the Moreton Say Parish Council, and Treasurer of the Moreton Say Fund for Hospitals. The remains were laid to rest in Moreton Say churchyard on the 15th inst., amid tokens of the greatest respect. His widow, two sons and a daughter sadly mourn their deep loss.

Comte Ferdinand de Hemptinne.—We learn that Comte Ferdinand de Hemptinne, of Ghent, died suddenly a few days ago. He was seventy-two years of age and, like most members of the family, took a keen interest in the great horticultural industry of his country.

F. J. Harrison.—It is with very deep regret that we record the death of Mr. F. J. Harrison, one of the most enthusiastic of the northern amateur cultivators of Roses and a most successful exhibitor of these flowers. Together with the late Mr. George H. Mackereth, he was one of the founders of the North Lonsdale Rose Society, and acted as its Treasurer from the time of its formation in 1884. He also assisted in the organisation of the Saltaire Rose Society. As Chairman of the North Lonsdale Rose Society, and of the Ulverston Allotment Holders Association, he was very widely known in the Ulverston district, and also in the north of Yorkshire, while many southern growers of Roses and Sweet Peas made his acquaintance during the years prior to the war.

ANSWERS TO CORRESPONDENTS.

Apples Diseased.—*P. G.* The Apple sent is affected by scab disease. Syringe the tree with sulphate of iron and next spring spray with diluted Bordeaux mixture, just when the buds are beginning to open, again when the petals are falling, and a third time when the young fruits are about the size of Peas.

Amaryllis Belladonna.—*J. S. C.* Provided the situation has been chosen carefully, there should be nothing unusual in the flowering of Amaryllis Belladonna in east Yorkshire.

Cyclamens.—*R. W. R.* The leaves submitted were infested, more or less, with mite and thrips. Dip the plants in a nicotine insecticide and afterwards dust the undersides of the leaves with tobacco powder.

Cyclamen Roots infested with Beetles.—*F. B.* The "beetles" are those usually known as vine weevils, and are frequently found in soil containing a large percentage of leaf-mould. If the infestation is a very bad one, it may be necessary to shake the roots free from the soil they at present occupy and repot them in sterilised material; submerging the pots in lime-water will compel the weevils to rise to the surface, when they may be caught. It is always desirable to sterilise leaf-mould before it is used for potting.

Fungus in Manure.—*A. B.* The fungus is Coprinus stercovarius, growing from a sclerotium. This fungus does not always grow from a sclerotium, but sclerotia are not uncommon in damp manure.

Re-turfing a Bowling Green.—*G. R.* If the bowling green is treated in sections, as suggested, there would be considerable difficulty in making uniform levels. We should prefer to strip all the turf and then dig the whole area. The possibility of injury from frosts to the stacked turves could be met by a covering of dry litter, Bracken or some similar material. If, as we suspect, it is found that the original turf which was turned in when the green was first made, has not fully decayed, it should be forked out during the digging.

Roses under Glass.—*W. A. B.* It is rather late in the season to expect the best results from Roses potted up after this date. To obtain Roses in perfection a heated house is necessary, even if they are not wanted to bloom before April or May. Some of the most delicate and beautiful varieties which suffer from winds and rain in summer and from frost in winter, are specially suitable for growing under glass. Many climbing Roses lend themselves to this mode of culture. Early autumn is a good time to pot up Roses from the open ground; six-inch pots will be found suitable for most varieties, but very strong-growing and well-rooted plants may have larger pots. Use clean, carefully crocked pots, cut away damaged roots and do not place the plants too low in the soil. Weak and unnecessary growths may be thinned out at the time of potting, shortening the others when the plants have made fresh roots. Once established, however, the earlier they are pruned the earlier they will flower. At this late season they may be placed in a cool house and protected from frost, or, if required to bloom just before their natural period, they may be plunged in ashes in an open spot in the garden. All Roses like a fairly rich soil. Good turfy loam, a little bone-meal, silver sand in proportion to the texture of the loam, and charred earth will improve the compost. The object throughout the growing season should be to get a few fairly stout, well-ripened shoots by the autumn. Watering with tepid water should be carefully carried out throughout the season of growth. When growing freely, feed the roots with diluted liquid manure and soot-water, and light dressings of an approved Rose manure. Keep a sharp look-out for the Rose grub, which is best destroyed by hand picking, and lightly fumigate the house to prevent attacks of green fly. Forced Roses are subject to mildew and red spider; dusting with flowers of sulphur is the best remedy for these pests. During the first year, the Roses should be brought on very steadily and not forced into flower before April or May; 40° to 43° at night and 50° to 55° by day, to commence with, will be quite high enough, gradually raising the temperature to 50° at night, and up to 70° by day, with sun-heat, as they advance in growth. Sudden and violent changes should be avoided and everything done to keep the plants clean and healthy. If fine flowers are desired, December or January is quite early enough to commence forcing, and unless the nights are very cold, air may be admitted for the first fortnight or three weeks to strengthen the buds, but so soon as the leaves are formed, the house should be kept closed until much later in the season, when the weather is mild. Gradually harden the plants off after they have flowered, placing them in a cold house to ripen up their growths. The same routine follows every year; in September or October all pot Roses should be repotted, stood in a half-shady position, and carefully watered. As a general rule, Roses require little water during the autumn and winter months, and after being forced they naturally go to rest earlier and are thus in the best condition for forcing again. They require rather closer pruning than outdoor plants.

Streptosolen Jamesoni.—*M. A.* The plant at present in a seven-inch pot should be shifted into a ten-inch pot early in the New Year; it requires a good root-run. It should not be necessary to prune your specimen next spring as this species does not flower freely unless exposed to full sunshine. Streptosolen Jamesoni is seen at its best when planted out in a well-drained border in a greenhouse, and the growths are trained up under the roof-glass and not shaded.

Vine Borders.—*W. C. M.* You give us no information concerning the crop your vines carried, or the width of the inside border, but neither the vines nor the border can be exhausted after seven years, if the border was made as you suggest. The roots should not have gone down into the drainage, therefore, the possible cause of failure is lack of water, the roots having gone down for more moisture. You may add an outside border and one three feet wide is quite sufficient at present. Lift the fibrous roots and remove the strong ones which have gone down into the drainage. Your best course would be to take out three or four feet of the addition you made to the inside border three years ago, carefully preserving the fibrous roots and laying them in nearer the surface, cutting all strong ones back to the face of the old border. Use the old soil, with the addition of fresh material, to lay the roots in nearer the surface. Add sprinklings of charcoal and bone-meal as the border is made, and a dusting of vine manure nearer the surface. Build up a turf wall, leaving a space at least one foot between the border and the path to be filled up with Oak or Beech leaves; tread the border and leaves as firmly as possible. Remove the exhausted leaves every year, cut back the roots to the turf and again fill the space with leaves; allow your vines more water during the growing season, and they will quickly recover if you feed them judiciously.

Communications Received.—S. W. T.—G. B.—Constant Reader.—S. A.—A. C.—S. L. & Co.—W. E. S.—C.—G. R.—W. G.—G. B.

MARKETS.

COVENT GARDEN, Tuesday, December 20th, 1927

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–12 0
—elegans	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–40 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray 12's, 15's	5 0—7 0
Chrysanthemums, 48's per doz.—	
pink	18 0–21 0
—yellow	12 0–18 0
—bronze	15 0–18 0
—white	12 0–18 0
—red	15 0–18 0
Crotons, doz.	30 0–45 0
Cyrtomiums	10 0–25 0
Erica gracilis, 48's, per doz.	24 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz.	8 0—9 0
—hyemalis, 48's, per doz.	18 0–36 0
—nivalis, 48's, per doz.	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety	12 0—8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Solanums, 48's, per doz.	15 0–18 0
—60's, per doz.	8 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0–12 0
—cuneatum, per doz. bun.	8 0—9 0
Anemones, St. Brigid, per doz. bun.	8 0—9 0
Arums (Richardia), per doz. blooms	10 0–12 0
Asparagus plumosus per bun. long trails	2 6—3 6
—med. sprays	2 6—3 0
short ,,	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med, ,,	1 0—1 6
short, ,,	0 6—1 9
Camellias, white, 12's, 18's per box.	3 0 3 6
Carnations, per doz. blooms	7 0–10 0
Chrysanthemums, per doz. blooms—	
—white	4 0—8 0
—yellow	4 0—6 0
—pink	4 0—6 0
—bronze	4 0—6 0
—red	4 0—6 0
—single varieties	2 6—4 0
—spray, bronze, per doz. bun.	18 0–24 0
—spray, pink, per doz. bun.	18 0–24 0
—spray, yellow, per doz. bun.	24 0–30 0
—spray, white, per doz. bun.	18 0–30 0
—single varieties, spray, per doz. bun.	18 0–30 0
Croton leaves, per doz.	1 9—2 6
Daffodils, Single, per doz. bun.	— 48 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	10 0–12 0
Freesia, white, per doz. bun.	5 0—6 0
French flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	5 0—6 0
—Violets, Parma, large, per bun.	8 0–10 0
—Ruscus, green, per pad	5 0—6 0
—Solanum fruits, per pad	8 0–10 0
—Anemones, mixed, doz. bun	12 0–15 0
French flowers—	
—Ranunculus, carmine, per doz. bun.	7 0—9 0
— — Barbaroux, per doz. bun.	7 0—9 0
— — Romano, per doz. bun.	15 0–18 0
—Roses, Saffrano, per pkt.	2 3—2 6
—Marguerite, yellow, per doz. bun.	2 6—3 0
—Violets, single, per doz. bun.	2 0—3 0
Gardenias, per doz. blooms	9 0–12 0
Heather, white, per doz. bun.	— 12 0
Hyacinths, Roman, 6's, per doz. bun.	2 0—2 6
—on Bulbs, per doz. bun.	5 0—6 0
Lilac, white, per doz. sprays	6 0—8 0
Lilium speciosum album, per bun.	5 0—6 0
—short, per doz.	5 0—6 0
—rubrum, long, per bun	5 0—6 0
—short, per doz.	— 5 0
—longiflorum, long, per bun.	5 0—6 0
—short, per doz. blooms	— 5 0
Lily-of-the-Valley, per doz. bun.	30 0–36 0
Marigolds, per doz. bun.	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Narcissus Soleil d'Or, per doz. bun.	15 0–18 0
—Paper White, per doz. bun.	10 0–12 0
Orchids, per doz.	
—Cattleyas	21 0–30 0
—Cypripediums	8 0–10 0
Poinsettias, per doz. blooms	18 0–30 0
Roses, per doz. blooms—	
—Columbia	10 0–15 0
—Richmond	12 0–15 0
—Madame Butterfly	12 0–15 0
—Madame Abel Chatenay	5 0—6 0
Smilax, per doz. trails	3 0—4 0
Tulips, scarlet and white, per doz. bun.	18 0–24 0
Violets, per doz. bun.	3 0—6 0

Remarks.—This should be one of the busiest weeks of the year in the cut flower trade. Prices will fluctuate according to supply and requirements. There is every prospect of a good supply of Chrysanthemums, both disbudded blooms and spray varieties, also of Lilium longiflorum. If the present severe weather continues it is difficult to suggest prices. There is likely to be a very limited supply of Carnations and Roses, and prices for these bloom may reach a high figure before Saturday next, as also they may for Richardias, if there is the usual demand for Christmas decorations. Daffodils, Hyacinths and Tulips have increased in quantity during the past week, but this is not likely to cause any reduction in price. White Lilac is now arriving in much better condition; a few sprays of mauve Lilac have been on sale this week. Iris tingitana and Poinsettias are very attractive for decorative purposes. The cold weather has shortened the supply of Violets from home-growers, and there is likely to be a very short supply during the next few days.

French Flowers.—These arrived to-day in a frozen condition and were practically useless. If the severe weather continues, these imported blooms will be greatly missed during the present week, as there is always a good demand just before Christmas for Narcissi, Anemones, Mimosa, Ranunculuses, Violets and Roses.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Newton Wonder	4 0—8 0
—Lane's Prince Albert	4 0—8 0
—Bramley's Seedling	4 0–10 0
—Other cookers	3 0—5 0
—King's	3 0—5 0
—Cox's Orange Pippin, per case	20 0–35 0
½-sieve	6 0–15 0
—Blenheim Pippin, ½-sieve	3 0—5 0
Apples, American—	
—Newtowns	12 0–14 0
—King David	12 0–14 6
—York Imperials, per barrel	28 0–30 0
—Winter Banana	13 0–14 0
—Jonathan	10 6–16 0
—Oregon, Newtown Pippin	16 0–18 0
Apples, Nova Scotian—	
—Cox's Orange Pippin, per ½-barrel	26 0–30 0
—Ribston Pippin, per barrel	18 0–24 0
—Wellington	22 0–26 0
—Russet	26 0–30 0
—British Columbian Jonathan	13 0–14 0
Apricots, South African, per box	8 0–10 0
Bananas	18 0–26 0
Grape Fruit—	
—Blue Goose	— 40 0
—Dominica	— 22 6
—Jamaica	24 0–25 0
—Florida	— 30 0
Grapes, English	
—Alicante	1 6—3 0
—Colmar	1 6—3 6
—Muscat	5 0–10 0
—Canon Hall	6 0—8 0
Lemons, Messina, per case	25 0–35 0
—boxes	9 0–14 0
Nuts—	
—Cobs	1 3—1 6
—Walnuts, Grenoble, per bag	8 0—9 0
—Chestnuts, Italian, bag	20 0–30 0
Oranges, per case—	
—Valencias (Spanish)	8 0–35 0
—Jamaica	— 18 0
—(Australian)	12 0–15 0
—Jaffa	14 0–16 0
—Tangerines	1 0—2 2
Peaches, South African, tray	5 0–14 0
Pears—	
—Doyenné du Comice, per doz.	4 0—8 0
—Californian—	
—Doyenné du Comice, case	27 0–28 0
—½-case	16 0–17 0
—Winter Nelis, per case	25 0–26 0
—Beurré D'Anjou	25 0–27 0
Pines, per case	25 0–36 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon	8 0–10 0
—Italian	5 0—5 6
—Paris Green	8 0—9 0
—Sprue	— 1 6
—"National"	— 20 0
Beans, Madeira, per box	3 0—8 0
— Guernsey, per lb., finest	4 0—7 0
—Ordinary	4 6—8 0
Beets	6 0—8 0
Brussels Sprouts, ½-bag	8 0—9 0
Carrots,	6 0—7 0
Cauliflower, per crate	8 0–10 0
Celery (washed), per doz. fans	12 0–30 0
Cucumbers, each	2 0—4 0
French Endive, per doz.	3 0—4 0
—Batavia, per doz.	2 6—3 0
Leeks, per doz.	3 0—3 6
Lettuce, French, round, per doz.	2 0— 3 0
Mint, forced, per doz. bun.	4 0–10 0
Mushrooms—	
—Cups	2 0—3 0
—Broilers	1 6—2 0
Onions—	
—Dutch	7 6—8 6
—Spanish	10 0–14 0
Parsnips, cwt.	4 0—5 0
Peas, Guernsey, per lb.	2 0—6 0
Potatos—	
—English, cwt.	5 0—8 0
—Guernsey, new, per lb.	0 7—1 3
—Azores, case	10 0–20 0
Tomatos, English—New Crop—	
—pink	10 0–12 0
—pink and white	10 0–12 0
—white	4 0—6 0
Tomatos, Canary Islands	10 0–13 0
Turnips, per cwt.	3 6—4 0

Remarks.—The severe weather has been entirely unfavourable to the fruit trade. The demand has been checked and, in addition, considerable quantities of produce have arrived frozen and in some instances quite useless. Hothouse Grapes have been selling freely, as is usual at this time of year. Some Peaches and Apricots from the Cape have also sold fairly well. Oranges are plentiful; ordinary grades are comparatively cheap, but the higher-class Oranges have sold well at better prices. Imported Apples are not plentiful, but there are ample stocks for the present demand. First grade English Bramley's Seedling and the best Cox's Orange Pippins have been enquired for, but there is no improvement in the trade for medium-class fruit. The Christmas shipment of Pineapples is a heavy one, about 12,000 cases, and the condition of the cargo is variable. The Nut section is fairly busy and the average price level is moderately high.

Tomatos from the Canaries are a heavy supply and quotations are easier. The small supply of English new crop Tomatos is popular, although prices are rather prohibitive. Cucumbers have reached an abnormally high price level, and this is probably due to the shortage caused by the weather. Guernsey Beans are making more money and reached the highest price this season. The shipments of Madeira Beans this week are in poor condition owing to frost. Mushrooms maintain a good price level but quantities are not heavy. Practically all French salads have arrived frozen and the Lettuces have been selling comparatively cheaply. Green vegetables are likely to reach fancy prices if the present severe weather holds.

GLASGOW.

Prices in the cut flower market displayed a little irregularity last week, but the general tone was firm, especially for Carnations, which advanced to 6s. and 7s. per dozen, and Roses, 8s. and 9s. for pink varieties, and 4s. to 5s. for red. Fewer Chrysanthemums were available at the following quotations: Phyllis Cooper and Mary Morris, 2s. 6d. to 3s. for 6's; Red Lincoln, Favourite, Duckham, Winter Cheer and Framfield Pink, 2s. to 2s. 6d.; Exmouth Crimson, 1s. 9d. to 2s. 3d.; Florrie King, 9d. to 1s. 3d.; Wilcox, 1s. to 1s. 3d.; Pink Triumph, 8d. to 1s.; Niveus, 1s. to 1s. 6d.; Heston White, 6d. to 9d.; and Balcombe Beauty, 2s. to 3s. per dozen. Lilium longiflorum averaged 4s. per bunch. Narcissi, 1s. 6d. to 3s. per dozen; and Asparagus Fern, 1s. to 2s. per bunch. Bowls of Tulips made 1s. 6d. to 1s. 9d. each.

The turnover in the fruit market was disappointing for the season of the year. Oranges were dearer, Jaffas a 14s. to 16s. per case; Valencia, 13s. to 28s. according to counts; Mandarin, 1s. 2d. to 2s. per tray; and Grape Fruit, 20s. to 24s. Apples sold slowly, notwithstanding that this was Canadian Apple week, and prices were inclined to drop. Newtown Pippin sold at 16s. and 20s. per case; Jonathan, 10s. 6d. to 15s.; Grimes' Golden, 12s. to 15s.; Delicious, 14s. to 16s.; Winesap, 14s. to 15s.; barrel Apples were steady for Baldwin, Ben Davis, Spies and York Imperials, while Canadian Kings declined to 36s. to 38s. for No. 1, and 32s. for No. 2. Grapes remained unchanged at 3s. to 3s. 6d. per lb.; Californian Winter Nelis Pears, 25s. to 30s. per case; Teneriffe Tomatos were practically unsaleable and were offered at 10s. per package.

In the vegetable section, Lettuce sold at 3s. to 4s. per dozen; Cauliflowers, 4s. to 5s.; Endive, 3s. to 4s.; and Mushrooms, 2s. to 2s. 6d. per lb.

CATALOGUES RECEIVED.

Seeds.

Dobbie and Co., Ltd., Edinburgh.

Sale and Son (Wokingham), Ltd., Wokingham, Berks.

Little and Ballantyne, Carlisle.

J. R. Pearson and Sons, Ltd., Lowdham, Notts.

Toogood and Sons, Ltd., Southampton.

Clibrans, Ltd., Altrincham.

Stewart and Co., 13, Sth. St. Andrew Street, Edinburgh.

E. Webb and Sons (Stourbridge), Ltd., Wordsley Stourbridge.

Plants, etc.

Dobbie and Co., Ltd., Edinburgh.—Plants.

The Shoulder Hoe Co., Ltd., 3, Hills Place, Oxford Circus, W.1.—Hoeing and cultivating implements.

Foreign.

R. Andries-De Spiegeleer, Grimmingen (Santbergen), Belgium.—Dahlias.

GARDENING APPOINTMENTS.

Mr. T. Churton, for the past three-and-a-half years gardener to C. Boot, Esq., at Sugworth Hall, near Sheffield, as gardener to A. R. Hollins, Esq., Milner Field, Bingley, Yorkshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. H. W. Goode, for the past two years gardener to P. Balmer Lawrie, Esq., Kingsley Green, Haslemere, Surrey, as gardener to W. Harold Edwards, Esq., Toddington Manor, Toddington, Bedfordshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

SKIM THE CREAM
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YOUR ADVERTISEMENT IN FIRST

THE
Gardeners' Chronicle

No. 2140.—*SATURDAY, DECEMBER* 31, 1927

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Average Mean Temperature for the ensuing week deduced from observations during the past fifty years at Greenwich, 38.2.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 28, 10 a.m. Bar. 30.5. Temp. 30°. Weather, Fine.

Rothamsted Field Experiments II.

As is but natural in a commercial age, the value of dressings of fertilisers is measured in terms of increased yield of crop. Experiments at Rothamsted* reported by Sir John Russell indicate, however, that fertilisers may have a significant effect on the quality of the crop. This, indeed, is not surprising, for the compounds used as fertilisers may and often do contain other elements besides nitrogen, phosphorus and potassium. Chlorine, for example, is present in kainit (which is made up largely of potassium chloride) and in muriate of ammonia. Now it is known that the element chlorine, although not an indispensable plant food, does exert an influence on plant growth and behaviour. Buckwheat, for instance, when grown without chlorine compounds, reaches the flowering stage and then incontinently drops its flowers. Gardeners who use common salt for dressing Asparagus beds, though they usually regard the practice as a concession to the age-long habits of a maritime plant, may thus find a new sanction for this old practice. However that may be, there seems to be no doubt from the results of experiments at Rothamsted that the use of muriate of ammonia (ammonium chloride) on Barley induces that plant to produce more grains per acre than are found when nitrogen is given in another form, for example, as sulphate of ammonia. The increase in number of grains is considerable, ranging in some years from a mere 330,000 to upwards of one-and-a-half million in other years. Even when the crop is no larger, the increase in number of grains still occurs. It looks as though the presence of chlorine made a difference to the fertility of the Barley florets. These facts are, of course, of special interest to gardeners. Self sterility which affects certain varieties of fruit trees is not always absolute. May it not be that applying a fertiliser containing chlorine—muriate of ammonia or muriate of potash—partial sterility might be overcome! Another direction in which a horticultural application of these facts might be found is in the manuring of early Potatos, and of maincrop Potatos in late districts. For, apparently, muriate of ammonia hastens maturity. Potato haulm yellows sooner when muriate of ammonia is used than it does when sulphate is substituted for it. This earlier maturity is, of course, advantageous in the case of early varieties, and in the case of late varieties of Potatos grown in late districts. It would, on the other hand be a disadvantage in the case of Potatos grown on early land. Herein may perhaps be found the explanation of the common opinion that potash salts or sulphate of potash are better forms of potash as a component of Potato fertilisers than is muriate. It would seem as though they are better in some climates, and in some soils, and not so good in others. These investigations open out a long vista of pleasing possibilities. Some day we shall, perhaps, know how to manure for quality as well as we know now how to manure for quantity. The subject appeals to the epicure. But it should appeal equally to all, even to those who set no store on the pleasures of the table. For it is a maxim of physiology that unless an animal enjoys its food it cannot fully profit by it. Flavour is an aid to digestion, and the best foods are those which evoke satisfaction in their consumption. There is, therefore, an ample field of experiment open to the private gardener. It is, however, not one into which he will venture precipitately, though he might try a few cautious experiments along the lines we have indicated. No doubt Rothamsted will persist in following this interesting line of research, and if so, we may presently expect fertiliser recipes for flavour of such sureness, that though we may never gather Grapes off Thistles, we may, especially in sunless years, find our Strawberries or Raspberries, and even our Apples and our Plums, more palatable than they are apt to be when sunshine fails to develop to the full their inherent capacity for delectableness.

"The Gardeners' Chronicle" Almanac for 1928.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Shortage of Rushes for Chairs—There appears to be a shortage of fresh-water Rushes suitable for making chair-seats, baskets and mats, and for allied purposes, for the Director of the Rural Industries Bureau, 26, Eccleston Street, S.W.1, has appealed for information concerning any unused beds in various parts of the country. where there may be a marketable quantity. The best Rush for the above purposes is Ruscus conglomeratus. It is the Soft Rush, Ruscus effusus, which was used so extensively for supplying the wicks of the old tallow "dips."

Educational Garden, Singleton Park, Swansea.—A list has been published of the seeds available for exchange and distribution from the Educational Garden, Singleton Park, Swansea. Over five hundred species are available. The list may be obtained—by those in charge of similar institutions—from Mr. D. Bliss, Parks Superintendent, 4, Prospect Place, Swansea.

Allotment Gardens of Scandinavian Cities.—A stock of Potatos and roots for the winter, as well as enough vegetables to supply the summer needs, are often raised by garden farmers who till city-owned, vacant, suburban plots in Finland at very low rentals. Such allotment gardens are to be found in Helsingfors, Gumtack, Brunakarr and Sveaborg. The tiny villas built on the plots are used during the winter as sport sheds and as storehouses for the skiis, sleds and skates of the families who come out on holidays for the snow sports. In the summer, the appearance of these garden groups is very attractive, so well is each square yard of ground cultivated. They offer recreation, states the *Monitor*, for the man who must work all the summer in the city, and for his family whom he may not be able to afford to send to the country. Here the wife and children may be out in the air all day, the older children helping to weed, and the little ones playing in a common Pine and Birch grove. A similar state of things exists in many of the large towns of Sweden and Denmark.

Golden Wedding of Kew Employee—On Christmas Day, Mr. and Mrs. Abel Watford celebrated their golden wedding at the Royal Gardens, Kew. Mr. Watford, who is well-known to many generations of Kewites, is still engineer-in-charge of the pumping station, although it is expected that he will retire very shortly, and, as he resides in the official cottage, he has created a record in the annals of Kew. A few years ago, Mr. Watford's long service at Kew was rewarded with the M.V.O., which he received at Whitehall. He was the oldest member, and captain, of the Kew Palace Fire Brigade, which has been abandoned recently. In his younger days, Mr. Watford was an enthusiastic cricketer and, while a member of the Surrey County 2nd XI, he was chosen to play at Lords for the Southern Counties against the Northern Counties.

French Phytopathological Service.—The French Ministry of Agriculture is organising a phytopathological service, similar to that already existing in a good many countries, for the protection of imported and exported agricultural and horticultural produce from pests and diseases.

Legacy to a Gardener.—Amongst recent bequests appears a legacy of £50 by the late Mr. William Herbert Pets, of Dunkirty, Elgin, to his gardener, Mr. John Fraser.

Donation to the Royal Gardeners' Orphan Fund. The Bournemouth and District Gardeners' Association annually organises a concert in aid of the Royal Gardeners' Orphan Fund, and this year, thanks to the enterprise and hard work of Mr. C. Nippard, of Ashton Lodge Gardens, Branksome Park, and his willing band of helpers, a donation of £24 has been sent to the Fund.

The Surrey Garden Village Trust.—Under the above title the tenants of the agricultural small-holdings at Addington have formed a company and taken up 107 acres of additional vacant land. Previously there were seventy-seven holdings aggregating 202 acres, and these have been worked very successfully. Each applicant for one of the new holdings must have a working capital of at least £40 per acre and satisfy the Committee that he possesses expert knowledge of at least one branch of food production. The existing holdings vary considerably in extent up to a maximum of ten acres. General market crops are grown. There are small fruit plantations, and most of the small-holders keep pigs and fowls. The produce finds a ready sale in the neighbouring town of Croydon.

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* *Journal* of the Ministry of Agriculture. XXXIV. November 8, 1927.

Christmas Weather.—With a brief rise in temperature, which only flattered to deceive, the wintry weather continued. On the Wednesday before Christmas, business people found the roads and streets almost impassable on account of the "silver thaw" which had set in. Fortunately, it is only very occasionally that we in this country, with all its changes, experience such climatic conditions. Cold rain fell during the night and early hours and froze as it fell. The supreme difficulties and casualties have been graphically recorded in the Daily Press, whose writers seem to have enjoyed the opportunity of delving into climatological records. By mid-day a warm current of air quickly dispelled the treacherous ice from the southern parts of the country and the rain continued, dispelling all expectations of a "White Christmas." But, as we anticipated when writing last week's note, the change to mild conditions was very temporary. On Christmas evening snow fell heavily, thus confounding many of the experts, and there have been sharp frosts at night. While snow in towns is chiefly a source of discomfort, we need scarcely remind our readers that in the garden this heavy mantle of snow is of great protective value when followed by severe frosts, and will probably preserve many shrubs and plants that otherwise would be killed. It is in the low-lying districts, where floods have occurred, that the losses are likely to be the most serious. On the morning of Boxing Day, while the snow was yet undisturbed, and from six to twelve inches thick, the world looked very beautiful, for snow, like the setting sun, adds beauty to the already beautiful, and turns dreary wastes and ugly habitations into exquisite pictures.

Patents in 1927.—It is very satisfactory to note that there will be an increase of over one thousand Patent Applications this year beyond those of 1926, and that it is the best year since 1922. Messrs. Rayner and Co., the well-known London Patent Agents, inform us that electrical inventions are largely in evidence, due, no doubt, to the Government scheme of electrification of the country. Chemistry runs into second place, many applications coming from Germany relating to dyes and colours. Synthetic silk, the wonder-child of the chemist, is being very largely experimented with by great English and foreign concerns, who have obtained numerous Patents. The many tools and appliances that are now required for easier and better work in the garden are well represented in the inventions and patents of 1927, and there is a general trade advance in many other important industries. The Improved Patent Office figures will greatly brighten the outlook for business in the New Year.

Narcissus Irish Queen.—The Daffodil sent to the Royal Horticultural Society's Trials by Mr. Watts under the name of "Mavourneen" and which received an Award of Merit this spring for garden decoration, has now (since that name is preoccupied) been named Irish Queen.

New Scotch Potatos Registered.—The Board of Agriculture for Scotland announces that on the recommendation of the Synonym Committee it has registered the following new varieties of Potatos, which have undergone the usual three-years' test, viz., Herald, raised by Messrs. McGill and Smith, Ayr, and Arran Banner, raised by Mr. Donald McKilvie, Lamlash, Arran. In the opinion of the Committee, Herald is superior to Sharpe's Express and Eclipse. although the Committee realises that this variety cannot supplant either Duke of York or Epicure; Arran Banner is recommended as a high-yielding early main-crop variety. The Committee also recommends that further extended trials of Doon Star be made in 1928 before an opinion is expressed as to whether or not it is worthy of registration. The following is the Board's description of the two varieties:—*Herald*: Maturity, first early. Tuber, oval to oblong; skin white; eyes shallow; flesh white; sprouts blue. Foliage: haulm, medium height to upright; main stems strong; leaflets light to medium green, broad, thin and cupped; terminal leaflet often tied, glossy. Flower white; berries occasional.—*Arran Banner*: Maturity, early main-crop. Tuber, round pebble; skin white; flesh white; eyes shallow, saucer-shaped; sprouts pink. Foliage: haulm tall, upright; stems strong, slightly mottled purple, leaf markedly open; midrib of leaf slightly coloured at the bases of leaflet stalks; leaflet medium green, dull, slightly wrinkled; secondary leaflets often borne on leaflet stalks; terminal leaflet droops to perpendicular. Flower not observed; buds frequent, reddish-purple and hairy.

Mr. H. H. Brown.—A native of Durham, Mr. H. H. Brown started gardening at Shortley Grove, in that county, and, after three years became a journeyman gardener at the neighbouring estate of Shotley Park. Then, realising the value of experience in a good nursery he obtained employment in the nurseries of Messrs. Fisher, Son and Sibray, at Handsworth, Sheffield. This was in 1886, when the firm was, perhaps, better known in the north of England for the general excellence of their stock than in the south. To-day the high quality of the trees and shrubs grown by Messrs. Fisher, Son and Sibray are fully appreciated all over the country. Having, as he states, gained valuable experience at Handsworth, Mr. Brown moved to Osberton Manor Gardens, Notts., then famed for the growing of high-class fruit, and especially of Grapes. His next move was still further south and to Gunnersbury Park Gardens, where he became foreman of the fruit department. Thirty years ago Mr. Brown took over the charge of the well-known gardens at Castle Hill, Englefield Green. During this period Mr. Brown has managed the gardens with great success. Though only occasionally in the public eye, as when he has successfully shown Grapes of his growing at the R.H.S. Fruit Shows, he has quietly done good work, winning the admiration of his friends and deserving the satisfaction of his employers—the late C. C. Raphael, Esq., and the Hon. Mrs. H. Tufton.

MR. H. H. BROWN.

King Arthur's Castle View for the Nation.—There is a special interest to horticulturists in the movement which is soon to be started to preserve Church Cliff, Tintagel, for public enjoyment, because one of the most generous supporters of the scheme is the Lord Lieutenant of the County, Mr. J. C. Williams, of Lanarth, who is widely known for his love of gardening. Church Cliff is about fifty acres in extent and overlooks the romantic ruins of King Arthur's Castle. The island rock itself is part of the Duchy of Cornwall, vested in the Prince of Wales, and so is safe from the builders. The present vicar of Tintagel, fearing for the future of his glebe lands, has obtained the ready approval of the Ecclesiastical Commissioners to his proposal to part with them, and the National Trust will care for them for the public use for all time. Although chiefly of only potential building value, part of the area is generally considered to be the highest cultivated land in the west of England.

Disappearing Canadian Forests.—In a letter to the *Morning Post*, last week, Mr. Frank J. D. Barnjum, writing from Annapolis Royal, Nova Scotia, makes a strong appeal for the Canadian forests, which, he points out, are in a critical condition. The entire Dominion has now been opened up, and there are no more forest worlds for Canada to conquer. Vast quantities of pulp wood go south to enrich another country and leave the country of production all the poorer. In addition to the depletion thus caused, Mr. Barnjum refers to the official records which state that four-and-a-half times as much timber is destroyed in the Dominion by insects, fungi, winds and fire as by the axe—a truly alarming statement.

A National Sweet Pea Society for Holland.—We are interested to learn that lovers of the flower have formed a National Sweet Pea Society in Holland, very much on the lines of our own Society. The headquarters of the Dutch Society are at Leidschevaartweg, Haarlem. Mr. H. Carlée, of Haarlem, is the Chairman, and Mr. B. P. Vader, of Overveen, is the Secretary of this new special floral Society.

Glasgow Flower Shows, 1928.—It has now been definitely decided that the Autumn Flower Show to be held in the new Kelvin Hall, Glasgow, during the last week of August next, will be jointly promoted by the Corporation and the Glasgow and West of Scotland Horticultural Society. The Directors of the Scottish National Sweet Pea, Rose and Carnation Society have also decided to change the venue of their annual show to Kelvin Hall. Among the new prizes embodied in the schedule there is one of £5 offered by Messrs. C. C. Morse and Co., California, for the best bowl of their variety Pinkie.

Antwerp International Horticultural Exhibition, 1930.—We recently announced that the Antwerp Royal Horticultural Society had come to an arrangement with the sister societies of Ghent and Brussels by the terms of which the Antwerp Society will organise a great International Horticultural Exhibition in the spring of 1930, with the support of the Ghent and Brussels societies. This arrangement has recently been followed up by another made between the delegates of the Antwerp Society, represented by M. Emile Draps, President; R. Van Rysselberghe and J. Mulder, Secretaries, of the one part, and the members of the Provisional Horticultural Committee, with the Executive Committee of the 1930 exhibition in Liége. of the other part. The Liége delegation consisted of MM. Jean Sladden and Etienne Joiris, Administrators of the Liége Royal Horticultural Society; M. Charles Chevalier, Secretary; and M. Emile Coumont, Hon President of the Ensival Royal Society. The gathering was unanimous in its decision to contribute to the Antwerp International Horticultural Exhibition, and to put forth its best efforts to make a success of this floral manifestation in 1930. In this way the whole Belgian horticultural world will be mobilised to celebrate with becoming éclat, the Centenary of the Declaration of the Independence of Belgium. The delegates were likewise in agreement in favouring a general exhibition of horticultural products in September, 1930, at Liége, to which Antwerp growers will render their generous support. As regards the temporary exhibitions, these will bear a regional character, and detailed arrangements will be made later on. It is now certain there will be an International Horticultural Exhibition at Antwerp in 1930, and it is expected that all Antwerp residents, particularly the many flower-lovers to be found in the city, will heartily support the initiative shown by the horticultural societies and experts.

Status for Versailles Ex-Students.—There have been great rejoicings—culminating in a banquet which took place on October 29—over the decision of the French Minister of Agriculture that students who have passed through the National Horticultural College at Versailles and taken their degree shall receive the title of "Horticultural Engineer" ("Ingénieur" Horticole"). Some there are who regard this concession with contempt, and state that the title is a "label" of no value; but many of the ex-students, especially among the younger generation, highly appreciate the distinction accorded them.

Preservation of a Hampshire Beauty Spot.—The well-known Hampshire woodlands—Harmsworth Row and Eyersdown Copse—which adjoin the Humble River between Botley and Southampton, were recently advertised for sale and a movement was started to preserve the woods and other lands from being built upon. The safety of the major portion is now assured, as the woods have been bought by Mr. and Mrs. Hugh Jenkyns and given to the National Trust "In happy memory of their daughter Priscilla."

Increasing Attendances at the Zoo.—Up to the end of November there had been 2,135,397 visitors to the Zoological Gardens, London. The receipts were £67,797, which show an increase of £7,513 when compared with the corresponding period of 1926, and an increase of £11,565 on the average of the previous five years.

Parisian Florists' Banquet.—On Sunday, December 4, the annual fête of the florists of Paris and environs took place. The banquet, at which a large company was present, including many ladies, was presided over by the Inspector General of Agriculture, M. Guillon, and the occasion was further honoured by the presence of M. Nomblot, Secretary of the National Horticultural Society; M. Sauvage, Hon. President of the Syndical Chamber; and M. Van de Weyer, President of the Belgian Florists' Association. Needless to say, the decorations were superb, the pillars of the hall being twined with Smilax and grouped with Palms and Azaleas, while the tables were decorated with Roses, Carnations and Lilies. Many speeches were made at the banquet, and the evening finished gaily with a dance.

Appointments for the Ensuing Week.—TUESDAY, JANUARY 3: Royal Horticultural Society's Committees meet. WEDNESDAY, JANUARY 4: Nottingham and Notts. Chrysanthemum Society meets. THURSDAY, JANUARY 5: Linnean Society meets; London Gardens Guild Lecture. FRIDAY, JANUARY 6: Accrington Chrysanthemum Society meets; Bridport Chrysanthemum Society meets; Dundee Horticultural Society's lecture. SATURDAY, JANUARY 7: Blackburn Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Pear Beurré Gris d'Hiver Nouveau or Beurré de Luçon.*—This fine large Pear is, I think, calculated to form an important feature in our winter desserts. It seems to be of the race of the old Brown Beurré, Beurré Gris of the French; its fruit has nearly the same shape, but they are larger and generally covered with a thick coat of russet; it differs, however, widely from its type in the great merit of being fit for table from two to three months after Brown Beurrés are gone and forgotten; it is in season generally from the end of January till the middle or end of March; its flavour is peculiarly high; its flesh melting and very juicy, but liable in some soils to be a little gritty; it does not grow freely on the Quince, unless under glass, and is not hardy enough for a pyramid on the Pear stock, unless in very warm and sheltered situations, but it deserves a wall (a south-east, south, or west aspect would be most eligible), and ought to be in every good collection of Pears. *Thos. Rivers. Gard. Chron., December* 25, 1852.

Publication Received.—*Beautiful Flowers of Kashmir*, by Ethelbert Blatter; Vol. 1; John Bale, Sons and Danielsson, Ltd., Oxford House, Great Tichfield Street, W.1.; price 21/– net.

ORCHID NOTES AND GLEANINGS.

STENOGLOTTIS LONGIFOLIA.

ALTHOUGH the individual flowers are small, fine spikes of this cool-house Orchid are very useful and attractive. They appear from the end of October until well into the New Year, therefore they are most useful in maintaining a display of flowers during the darkest period of winter.

Stenoglottis longifolia is very easily cultivated, provided the plants are grown under favourable conditions. They delight in an airy position in a cool house. After the flowering season is over, they generally lose many of their leaves, but this is not detrimental, for it allows the young basal growths more light and air. When the old growths are dying off the water supply should be reduced, but the roots should never be allowed to become dry.

So soon as the young growths are about to make new roots, they should be potted, and the best results are attained when each growth is potted separately. Being terrestrial Orchids, a compost of two parts good loam to one part of leaf-mould will be found suitable, adding plenty of sand to keep it porous. Use ordinary pots, and afford ample drainage.

After potting, afford water carefully until the plants are well-rooted, when they will need copious supplies.

Stenoglottis longifolia, like the closely allied S. fimbriata, is a native of Natal and has been in cultivation for many years. *A.*

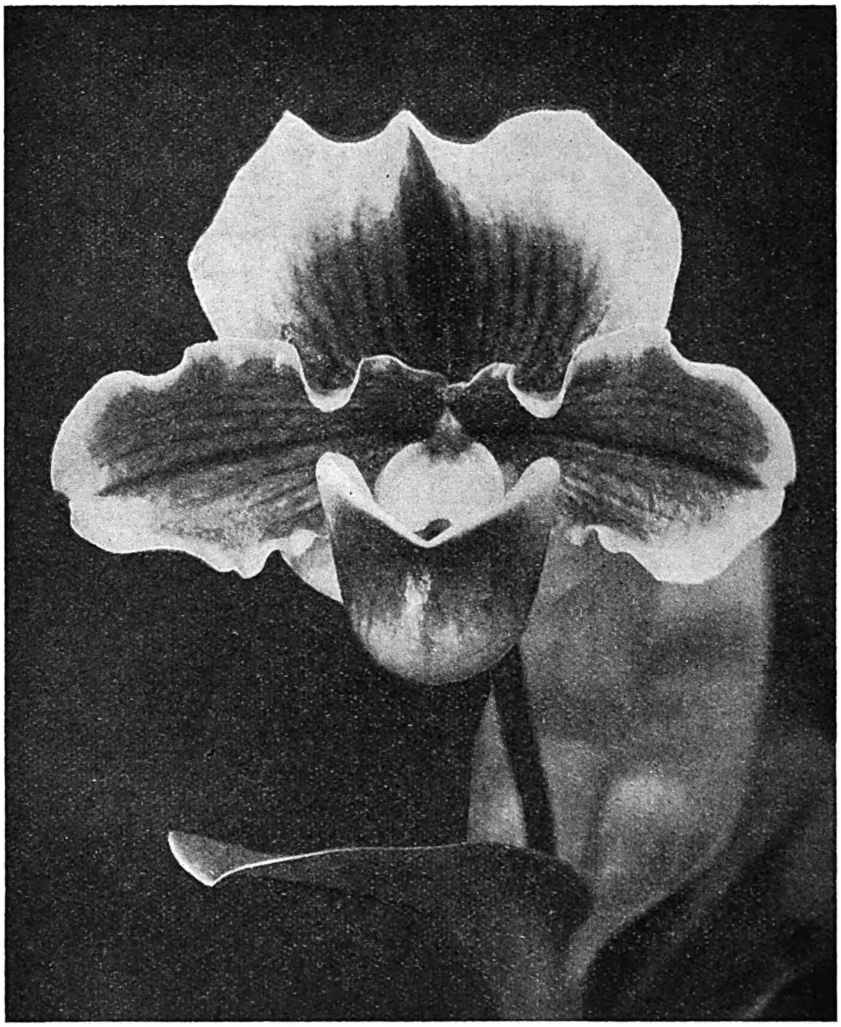

FIG. 248.—CYPRIPEDIUM WESTMINSTER.
R.H.S. Award of Merit, December 13. Flowers white, brown and yellow.
Shown by Messrs. Black and Flory. (see p. 493).

BULB GARDEN.

SCILLA PERUVIANA

IT was pleasant to observe such a favourable account of the Peruvian Squill as is given by *N. Wales*, on page 482. From it one gathers that your contributor does not experience the same difficulty as many do in obtaining regular annual bloom from S. peruviana. Like some other bulbous plants from warmer climes, it appears to miss the warmer seasons of its native land, and generally refrains from flowering after the first season. I have grown it and have seen it tried in other gardens, some of them in warmer localities than mine. It is possible that the lifting and dividing advocated by your contributor may have a good effect.

STERNBERGIAS IN SCOTLAND.

LIKE Sir Herbert Maxwell (p. 485), I shall be glad to learn of the flowering of the Sternbergias in northern gardens. They would be very pleasing if we could be sure they would flower with us. I have tried bulbs bought as S. lutea, S. angustifolia and S. macrantha at various times. What I found was that bulbs would generally flower the first year after planting, but the only one which might give a stray flower or two in after years was the one known as S. angustifolia. Bulbs of S. macrantha imported from Asia Minor bloomed splendidly the first season, but, so far as my memory serves, never again. One regrets having such a disappointing tale to tell. *S. Arnott.*

The Week's Work.

THE ORCHID HOUSES.

By J. T. BARKER, Dunstable, Bedfordshire.

Seasonable Remarks.—Another year has run its course, and although the past season has been far from an ideal one for many subjects, the cool Orchids have revelled in the dull, moist, cloudy conditions. After such a season, serious fluctuations of temperature should not be permitted, as immature plants suffer much more than those properly ripened. During this, the latter part of the year, we may look round and take stock of the season's work, sum up our successes and failures, see where we may improve the former and avoid the latter. At this season also much may be done to prepare for the busy season ahead. Peat and fibre may be prepared, crocks made ready, and a supply of Sphagnum-moss secured; in fact, everything that does not deteriorate by keeping may be dealt with. It is surprising what foresight and good management can accomplish in Orchid-growing. There is no excuse for slackness in the small matters suggested, for delays may mean the postponement of potting; meanwhile, the roots will have made so much progress that they cannot be potted without injury.

THE KITCHEN GARDEN.

By E. H. CROCKFORD, Gardener to THE RT. HON. LORD WAVERTREE, Horsley Hall, Gresford, N. Wales.

Broccoli.—Those who acted on the advice given earlier, and laid their Broccoli plants with their heads to the north, will now notice that the hearts are covered with their own leaves and protected from frost and snow. Should the weather prove excessively severe, a little Bracken or straw laid lightly over the bed will keep all secure. Where deep pits or frames can be spared, some of the most forward plants should be lifted and placed therein; cover the lights on frosty nights.

General.—Whenever the soil is sufficiently dry, advantage should be taken to run the hoe or scuffle between the rows of spring Cabbages, Spinach and Onions. See that all land drains are clear, otherwise the soil will soon become a sodden mass. During frosty weather keep the smother fire going and burn all rubbish which comes to hand, but take care that the useful ash is placed under cover. So much as fifteen per cent. to seventeen per cent. of potash has been found in the dry ash from green trimmings, but wet ash soon loses this fertiliser.

Retrospect.—On the whole, kitchen garden crops have been abundant and good during the year now closing, and they were grown with far less labour than would have been the case had the season been hot and dry.

PLANTS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Spiraeas.—For early forcing, retarded clumps will be found to give excellent results. The clumps should be potted in the smallest receptacles that will accommodate them without injury to the roots. They should not be subjected to strong heat immediately after potting; just cover the crowns with moss and stand them under a stage in the greenhouse until they commence to grow freely, when they may be given warmer quarters and more light.

General Remarks.—Continue the propagation of Chrysanthemums as cuttings become available. Cuttings inserted this month are for the production of large blooms; next month will be more suitable for rooting the decorative and Single varieties, while those that are grown to produce the latest flowers possible, a later date is still more suitable. The pots, soil and frames for the reception of the cuttings should be prepared. Undue flagging should be prevented. Continue to cut the plants down as they pass out of flower and place them in a cool house. For the propagation of Perpetual Carnations, choose cuttings from vigorous plants. Protect the occupants of cold frames during severe weather, but do not coddle the plants growing in cold frames; keep them sturdy and healthy by ventilating the frame on every possible occasion, remove dead leaves and guard against the ravages of slugs.

Bulbs.—An examination of the bulbs that are still in their plunging material should be made each week from now onwards, removing all those that have made sufficient roots and growth. Keep them in the dark for several days, then gradually expose them to the light. The season is now approaching when forced bulbs have to be relied upon to supply cut flowers, and no gain, and probably disappointment, will result if too hasty forcing is attempted. The bulbs should be introduced into gentle warmth at first, increasing the temperature gradually.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to COLONEL SPENDER CLAY, M.P., Ford Manor, Lingfield, Surrey.

Strawberries.—The mild weather during the early part of this month encouraged early batches of Strawberries to push up their flower spikes. When these approach the flowering stage they should be moved to the lightest and most airy part of the house. In a Strawberry house the earliest plants invariably have the best position, but few have this accommodation. Fresh air is imperative from the time they are introduced until the fruits begin to swell. Excessive fire-heat or anything approaching dry heat is most injurious, therefore, endeavour to coax the plants into flower with as little artificial heat as possible. Vigorous flowers may set without artificial aid, but a camel-hair brush should be used when pollen is plentiful in the middle of the day. Careful watering throughout their early stages of development is most important; although Strawberries delight in plenty of root moisture, serious mischief may be done by giving too much when the plants are in flower. Examine each plant, keep the roots in a moist state, but not wet. Another matter that must not be overlooked is mild fumigation at short intervals prior to the opening of the first flower. Introduce fresh batches according to the stock and the demand.

Figs.—Figs trees in successional houses may be put in readiness, as previously advised, cleaning and top-dressing them as may be required; they will then be ready for starting at any period of the New Year.

HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener to the EARL OF STRAFFORD, Wrotham Park, Barnet, Middlesex.

Winter Dressing for Fruit Trees.—The present is a suitable time for cleansing trees infested with moss and insects. Where the trunks and main stems are thickly coated with moss, scrape them with a small hoe and afterwards apply a good dressing of lime wash, dusting the smaller wood and branches with soot and lime mixed. Spraying with caustic soda, applied according to the directions given on each tin, is also effectual, as it not only destroys the insects but cleanses the trees of moss and leaves the bark bright and clean.

Nuts.—A few of the best varieties of Nuts should be grown in all gardens where there is space. Nuts will thrive in places not suitable for some other kinds of fruits, so long as the drainage is satisfactory. A moderately porous soil will suit them if the position is not too exposed. Large trees in full bearing should be manured occasionally.

Training.—The best form for a Nut bush is the basin shape, and its height need not exceed eight feet. Those who may wish to raise a few useful trees should plant young, strong suckers, and when these are well established prune them back to fifteen inches above the ground level. The young growths should be carefully selected and trained to form the future bush. Remove strong, useless wood, and prune old trees so as to encourage plenty of young twiggy, fruiting wood all along the branches.

THE FLOWER GARDEN.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Roses.—Newly-planted Roses, as well as established plants, should be examined frequently, especially after heavy rains and high winds, as they may be blown about and loosened and water then collects round the stems; when this happens, the ground should be forked up about them before any attempt is made to tread them in again. In some cases it may be necessary to lift and replant. All plants likely to be blown about should be staked, and even if this was done during the autumn, there may be plants requiring attention.

Snowstorms.—Over the greater part of the country snowstorms may cause a good deal of damage among certain Conifers; Cedars suffer very much, and large limbs are sometimes broken by the weight of the snow. Much damage may be averted if the snow is shaken off. In the north, where heavy falls of snow may be expected, long poles should always be kept in readiness for this work. Heavy falls of snow generally entail a considerable amount of labour in clearing paths and drives; for this purpose suitable tools should be kept handy. While light falls may be removed by the aid of brooms, heavier falls may entail the use of some form of snow plough or shovel, and for his purpose large, light, wooden shovels are best. Ponds and lakes may also have to be swept and cleaned for skating or curling.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Preparations for Seed-sowing.—Preparations for seed-sowing should always be made in good time, and supplies of loam, leaf-soil, sand, etc., placed under cover so that they may become drier than if left out-of-doors. Boxes and seed-pans should also be examined, and where the supply may have become depleted, fresh ones should be ordered or made at once. During stormy weather, dirty pots may be washed, dried, and stored in their respective sizes, and a rough calculation made as to probable requirements. Even the crocks, which, perhaps, receive less attention than most accessories, should be washed and sorted into various sizes, to facilitate their use when the busy time comes. Stakes should be cleansed and afterwards tied up into suitable bundles.

Seed Potatos and Other Roots.—Examine the boxes containing seed Potatos, and remove all bad or diseased specimens. The earliest varieties seldom fall victims to the Potato disease, as they are out of the soil before this fungus develops. These are now sprouting freely and should be allowed plenty of light and air to keep the sprouts from becoming drawn, always taking the necessary precautions to protect them during frosty weather. Ware Potatos stored under cover should also be turned over and have their sprouts removed so as to extend their season of usefulness.

Seed Catalogues.—These are now arriving, and quite a profitable way of spending an evening is to read some of them and make a note of any improved forms which the various firms have to offer. Progress is attained only by trying something new each year, and while it is, perhaps, necessary to take the glowing accounts of novelties with the proverbial "grain of salt," there is no doubt that many improvements in vegetables and flowers appear annually.

INDOOR PLANTS.

PRIMULAS.

Double Primulas are fine subjects for conservatory and house decorations, but their cultivation has decreased during recent years. Formerly, remarkably fine plants were on view at many of the autumn exhibitions. The specimens carried a wealth of bloom and abundance of healthy foliage. These plants were largely propagated from cuttings and from layers. The cuttings were inserted in small pots filled with light, sandy soil and placed in moderate heat.

A successful method of increasing the stock is by layering. So soon as the plants have finished flowering, remove a few of the basal leaves, partly sever the crowns with a sharp knife, and pile up a mound of fine soil and cocoa-nut fibre about the base of the plant. The soil should be kept moist; a close atmosphere is also favourable to quick root action. So soon as roots are formed, completely sever the crowns and place each one in a small pot. Excellent double varieties may be raised from seeds. The old double white Primula produces abundance of useful flowers during the winter, and a compost of good fibrous loam, thoroughly decomposed manure, and sharp sand, suits it. A light position and an intermediate temperature should be provided, and when the pots are well filled with roots, soot-water and weak liquid manure are beneficial.

The free-flowering Primula kewensis is a most useful plant for the conservatory during the winter and spring. The bright yellow, fragrant flowers are produced very freely. Seeds may be sown from April to June. This plant thrives in a light, open soil.

The Abyssinian Primrose, Primula verticillata, with sweetly-scented, yellow flowers and grey, downy leaves, is a most attractive plant and worthy of extended cultivation in pots. Both P. kewensis and P. verticillata may be grown in cool pits and they provide a colour that is lacking in forms of P. sinensis. The association of blue Cinerarias with the Abyssinian Primrose is very effective. *C. Ruse.*

HIPPEASTRUMS.

Most of the large-flowering Hippeastrums will be at rest and stored on shelves where they are kept free from frost and drip, but some of the species may be had in flower during the winter months and form a useful addition to our stock of winter-flowering subjects. H. aulicum is now in flower, its bright scarlet trumpets lasting well in the dull, short days, while its bold foliage makes a splendid foil to the stately, upright spikes. This species is propagated easily by division, and when well established will remain in good health in a comparatively small pot for years, only requiring ample supplies of water and liquid manure.

TIBOUCHINA SEMIDECANDRA.

Some two-year-old plants of this native of Brazil, formerly known as Pleroma, have made a wonderful show for the past few weeks in an intermediate house, their rich, deep, violet-purple flowers, borne in the greatest profusion, making a wonderful display of colour amongst the other occupants—mostly foliage plants.

The plants referred to are growing in eight-inch pots, and were accommodated for the most part of the summer months in a cold greenhouse, and only when it became evident that they were unlikely to develop their flowers entirely without heat were they removed to more comfortable quarters.

Cuttings made from young side-shoots are easily rooted, and if inserted at an early date and grown on, will make useful plants in six-inch pots for next winter's display, but it is the older and consequently larger plants of a second year's growth that become thoroughly decorative and useful. One or two flowering branches make a handsome display in a vase, the silvery, down-covered foliage being a perfect foil to the purple flowers. *A. T. Harrison.*

TREES AND SHRUBS.

BITTER ORANGES AT PORLOCK.

I enclose a photograph (Fig. 249) of a Bitter Orange bush fruiting in this garden. It is planted at the foot of the garden wall and receives shelter only during exceptionally stormy weather. We have several other specimens, also planted out in the open, and they have been there several years. They fruit well, and we use the fruits for marmalade, as recorded in my note that appeared on page 493. *G. W. W. Blathwayt, West Porlock House, Porlock, Somersetshire.*

HARDY FLOWER BORDER.

A LOST FORM OF ANEMONE APENNINA.

In 1890 or 1891, a few folk who admired alpine flowers obtained from the Abercorn Nurseries of Messrs. Munro and Ferguson, at Piershill, Edinburgh—a long extinct firm, whose catalogue, dated 1889, I still possess—a blue Anemone which we greatly admired. It was sold as A. blanda; it was not that species, but appeared to be a very fine form of A. apennina. I grew it for a number of years, but lost it during the period of the Great War, when official duties prevented me from attending to my plants as usual.

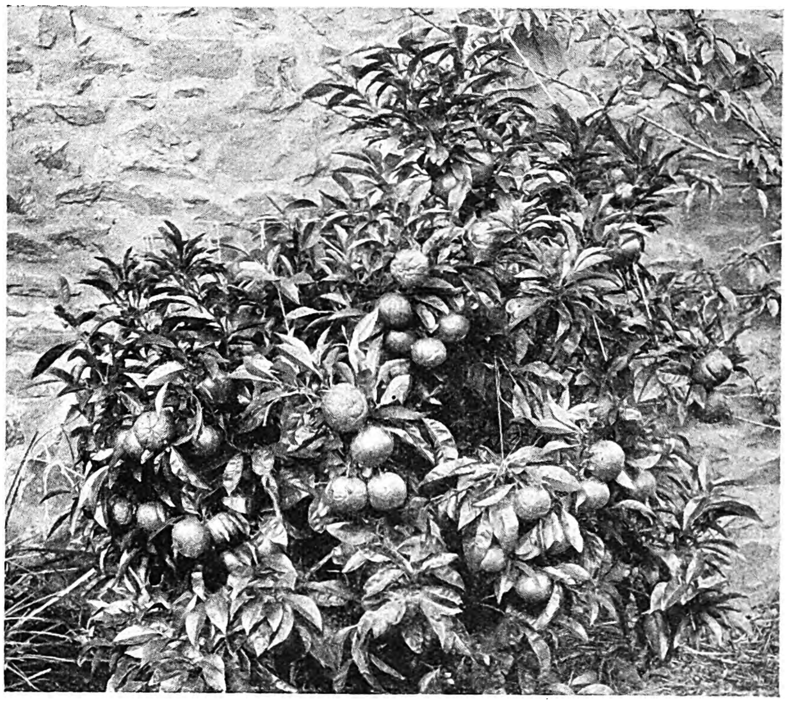

FIG. 249.—BITTER ORANGES FRUITING IN THE OPEN AT PORLOCK, SOMERSETSHIRE.

I had not seen it elsewhere for some time previous to that, and was surprised and interested to receive flowers and leaves from the late Messrs. Cocker, of Aberdeen, with a letter informing me that this Anemone was growing in one of their borders, and asking me if I could give them its name. As the nursery of the latter firm is now disposed of and I have never heard of this Anemone since, I therefore fear that it is lost.

While this "Anemone incognita," as I may term it, presented a similar appearance to some of the best forms of A. blanda, it flowered at the same time as A. apennina, and in general appearance had a close resemblance to that species, with the same rooting habit. It was of a lovely shade of blue, and the flowers, which were freely borne, were more symmetrical than those of the ordinary forms of A. apennina or even A. blanda. Up to the present, I have not been able to trace it again, but this note may lead to someone giving information regarding a charming flower of a delightful race.

MONTBRETIA (OR TRITONIA) ROSEA.

In thinking over the plants which, either alone or by union with other species, might be made of greater value for the garden, one cannot but remember Montbretia rosea, which, by-the-way, we are told should now be called Tritonia rosea. So much has been done in the way of development in the other Montbretias that it appears probable that M. rosea might yield excellent results, either by seedling-raising and selection or by hybridisation. It is quite a neat and graceful species, without any of the stiffness which is almost the only defect of the modern Montbretia, and its flowers are of a pleasing rose. I have found it hardier than some of the newer Montbretias.

Seedling raising might yield us flowers with larger blooms, or, still more desirable, of more pronounced colouring, but, as it is, M. rosea is quite a good garden plant of about eighteen inches high, with a number of pretty, rose flowers. M. rosea is a cheap plant and a few corms may be purchased for a small cost, and planted in spring, preferably in clumps, about two inches deep, and the same distance apart. M. rosea increases satisfactorily in ordinary garden loam, but in heavy soil a little sand should be placed below and round the corms. March is quite a good month in which to plant this pretty subject. *S. Arnott.*

ROSE GARDEN.

ROSA LAWRANCEANA.

Although its correct name appears to be Rosa indica minima, the varieties of the Rose known as R. Lawranceana are exquisitely pretty. This autumn, I much admired a colony of a double-flowered variety growing on the rock garden; the flowers were a good, deep rose colour, the small blossoms very double, and the miniature bush compact and rounded. The double forms, collectively, are often called "Fairy Roses," a not inapt description. R. i. minima is figured in *Bot. Mag.*, t. 1,762, under the name of R. semperflorens minima, and in *Bot. Reg.*, 538, as R. Lawranceana.

These little Roses enjoy a well-drained, sunny position and might well be more frequently employed on rock gardens and in borders; they are also excellent pot plants. *Ralph E. Arnold.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.*

XXII.—THE LAST WEEK.

EVEN while we were at the yak camp the fine spell of weather broke up, mist and rain came down, and when we awoke on October 23, the high peaks above 12,000 feet were white with the first film of snow; but this did not remain. Meanwhile, the crisp, keen weather of the past week had hardened the Rhododendron capsules in the alpine region; but whereas the small alpine species ripen their seeds in from three to four months, those of the temperate forest may take six or nine months over the business.

When we returned to the village on the 22nd, we found the Tibetans reaping the last of the meadow grass, and yak trampling about all over the place. There were still a few leeches on active service, but the cutting of the meadow had practically immobilised them. The river had fallen a lot, and it was possible to cross the flimsy, temporary bridge in comparative safety.

I had several days' work to do, including packing my seeds, an ascent to the high ridge after the 'Silver' Barberry and two or three Rhododendrons, and a descent to the low ridge for the 'Fox brush' Acer and the large-leafed 'Irroratum' Rhododendron; but the 23rd was spent doing staff work, paying the coolies, taking stock of rations, and so forth. I was anxious, if possible, to get away before the end of October, as I feared my coolies would not face the pass if I delayed too long; after all, they had to get back, I had not. It was clear that no reliance was to be placed on the weather. A spell of four or five cloudless days would be followed by a storm which might last a week. There was a new moon on November 3. The weather in the mountains often changes with the change of the moon—this may be a mere superstition, but most of us live by superstitions. Should I wait till November 3, or try to get away on October 29, so as to cross the pass on the last day of the month? It all depended on what the weather was going to do in the next few days—a 'change' might mean a change for the bad! In the end I decided to cross the pass on October 31, which happened to be a bad decision.

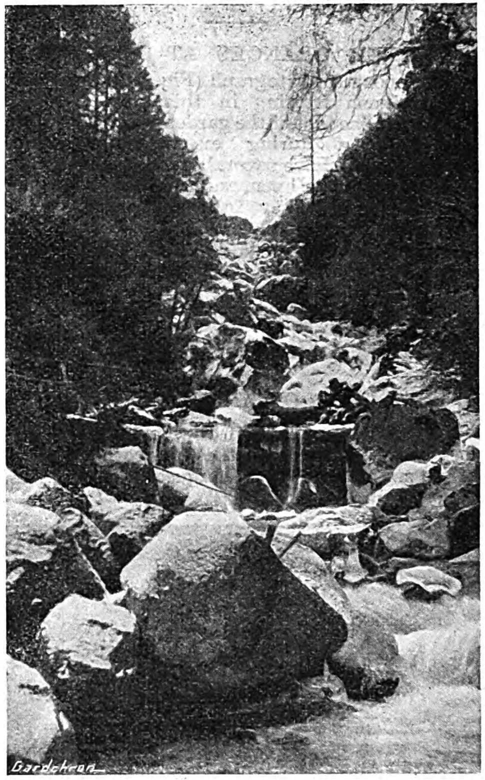

FIG. 250.—A HALF-FROZEN MOUNTAIN STREAM.

The Tibetans were quite unreliable, so I decided to dispense with them altogether, and trust to my Tarons and Lisus, even though they had little more than a rag of clothing apiece. I had twenty of these folk on the spot, and by giving them a little food and money down, with the promise of double wages for the journey to the Lohit, I kept them by me until we were ready to start.

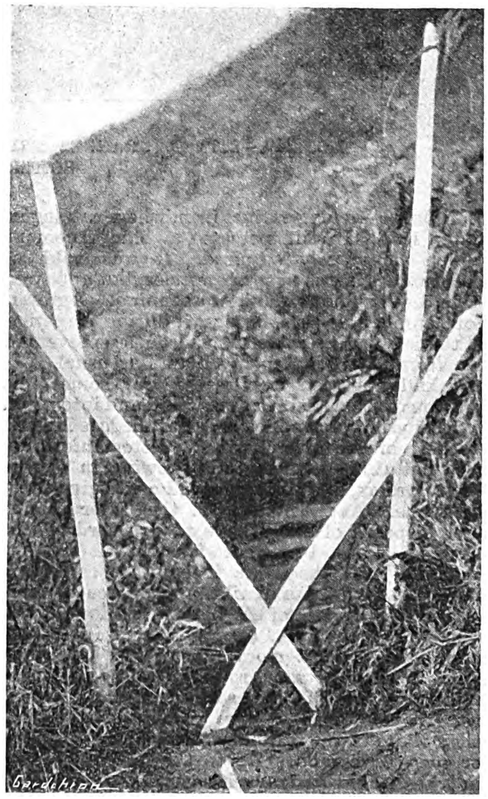

FIG. 251.—LISU TABOO AGAINST SICK PERSONS ENTERING A HEALTHY VILLAGE.

On October 24, I again tackled the limestone ridge, which was a fairly severe climb. We collected seed of all the good things—Silver Barberry, Cotoneaster, Ilex, Rhododendrons, Enkianthus and a Vaccinium. The Barberry had blue-black, Pear-shaped fruits, like a Mahonia, which was a pity. The leaves of the Enkianthus had turned scarlet, the 'Thomsoni' Rhododendron was bursting into pink flowers, but yielded only a dozen capsules, and the Cotoneaster, with its long ranks of coral-red berries, was splendid. There were even a few flowers on the ridge, including Aster and Lonicera. I ascended higher than we had been before, but the growth was so thick, even on the ridge, and there was so much to collect, that it was impossible to reach the summit. As it was, darkness had fallen before we got back.

The only other long excursion I made was down to the Rhododendron ridge, where I found many of the epiphytic Orchids, including a Coelogyne and the curious, gloomy-looking Dendrobium triste, in flower. The Acer still trailed its long fox brushes; the plant recalls A. Henryi, but it has simple, entire leaves, with long drip-tip, instead of compound leaves. A curious tree which had already puzzled me was in flower here. It is deciduous and has large leaves very like some of the Magnolias. Its fruits, like large, brown Walnuts, I had mistaken in the spring for flower buds (seen high up, they looked not unlike Magnolia buds), but now I discovered that they were in reality five-chambered, Rosaceous fruits, and the tree, which was leafless, and in full bloom, was a glorious sight, crowded with huge, scented, inflorescences, cream-coloured and fragrant as Meadowsweet. I secured a number of fruits, but found that more than half the seeds had been destroyed by grubs. Whatever the tree was, it was distinctly uncommon, a feature of the lower temperate rain forest round about 6,000 to 7,000 feet (rather lower than Magnolia rostrata), with Pinus excelsa, Quercus sp., Rhododendron Mackenzianum, etc. It seemed to prefer the exposed rocky ridges, which, although covered with forest (or because of it), were almost unscaleable; the flanks were too thickly covered with Bamboo for trees to get much chance.

Meanwhile, my hut was a litter of drying seeds, which were being packed and catalogued so fast as possible. Before sealing up any packet, I made sure that the bulk of the seed was fertile; that is to say, I scrutinised it through a pocket lens, and to pass the test, the seeds had to be (1) plump; (2) the right healthy colour, and (3) properly marked with the correct 'chop.'—ridges, tubercles, pits or whatever nature chooses to bestow. One soon gets to know what ripe, fertile seeds ought to look like, and if they were not up to sample, I threw them away.

October 28 was a glorious, cloudless day, which in the mountains is often only the lull before the storm. I made final preparations for a start next day, calling up all the coolies and telling them to parade early. I decided to leave the chokara behind, and take only my two Nung coolies, although it was difficult to converse with them as we had no common tongue; but the pyada did know some Burmese—probably as much as the chokara knew Hindustani. At the eleventh hour, I formulated a plan to return to Fort Hertz and cross to the Lohit by the Krong-jong pass (under 10,000 feet), if I failed to get over the Diphuk La; but if I once crossed the latter I was determined to go on, come what might. I had several objects in view. There was, first of all, the necessity for collecting seeds of the Rhododendrons and other shrubs found in the Di Chu valley in July. But even more important was the finding of a good route to, and base camp for, tackling the mysterious country which lies between the Lohit and the Tsangpo gorge. This country was only to be approached via the Lohit valley, and that in turn could only conveniently be reached from Sadiya.

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* The previous articles on Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, October 9 and November 20, 1926, and January 1, February 19, March 5, 19, April 9, 30, June 4, 18, July 30, August 20, September 10, October 1, 15, November 5, 19, and December 3, 17, 1927.

But since the days of Dr. Griffith, nearly a century ago, no botanist had succeeded in basing an expedition on Sadiya, and my own requests had been refused. Therefore the only thing to do was to appear in Sadiya, by permission, from the direction in which it was proposed to explore, and arrange things with Powerful People quietly on the spot, so that I could return later. Hence the vital necessity of crossing by the Diphuk La rather than by the Krong-jong, if it were humanly possibly. As regards time, as already pointed out, I was thirty-five marches from Myitkyina, but only twenty-three from Sadiya, so that, provided I was not held up anywhere, I actually saved twelve days by taking the Assam route. Of course, in practice I did not, and could not, have saved twelve days on so difficult a route; but when we started for Sadiya on October 29, little did I think that it was going to take us more than six weeks to get there.

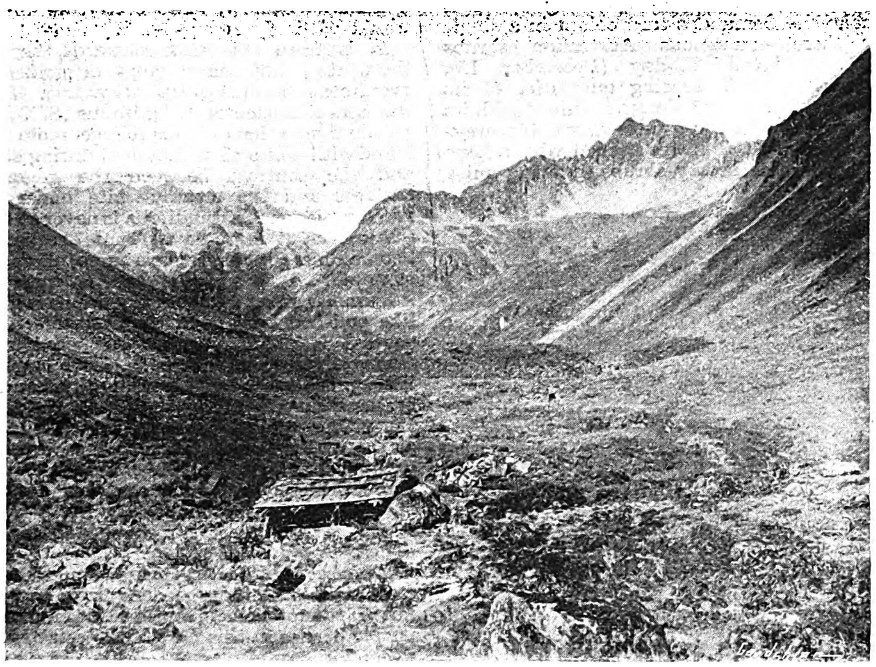

FIG. 252.—ALPINE SCENERY IN OCTOBER; IRRAWADDY-BRAHMAPUTRA DIVIDE; 16,000-17,000 FT. ALT.

As anticipated, the brilliance of the 28th was a warning, to be succeeded by drizzling rain after midday on the 29th. We ascended to the yak camp, and became enveloped in cloud; snow was falling a little higher up. It rained all night, and the morning of the 30th was thick. The coolies shivered and shook their heads, but there was nothing to be done now except make a bolt for the pass. We started in pouring rain, and were wet through and miserably cold by the time we reached my hut at 11,000 feet. Here we halted for a meal. The coolies proposed to stay the night, but I urged them to go on and hope for better things, so we went on to the last yak camp, at 12,000 feet. And that night it snowed again and in the early morning it began to clear. It was very cold for the coolies, but we had good cover and plenty of firewood; nevertheless, everyone looked blue after breakfast, until the winter sun peeped over the ridge and began to melt the snow. We could see the pass now, and it was apparently almost void of snow, which was melting fast, as the warm air began to come up from the Burmese jungle. Also the sky was clearing and the sun struggling out.

I got the coolies off, after lightening the loads so much as possible, and then went here and there to collect seeds. Even so, I reached the pass some time before the coolies, who had sat down in a body a few hundred feet from the top. Immediately I reached the summit I had a shock. An icy blast was blowing straight off the Tibetan plateau. The precipitous descent on the other side was banked fathoms deep with drifted snow, and looking down the valley, beyond the lake, one saw nothing but snow, snow everwhere, with never even tree to welcome one with thoughts of a fire. It was a most disheartening spectacle. Would the coolies face it ? I saw them toiling up below and decided to risk it; better to go ahead and stamp a trail. Down I plunged, floundering knee-deep, then waist deep, in the drifts, but making a good trail. At last I reached the lake, and halted to collect seeds; looking back I could see figures descending the great white face.

About two hours later, seven of us were gathered by the lower lake, not by any means out of the snow, but at any rate, in sight of timber. With my two Nung servants I pushed ahead to find a suitable camping ground, and light a fire, and struggling on through the still deep snow, we eventually pulled up on the flat, where two streams joined, and selected a site amongst a screen of Rhododendrons. Here the four coolies—two Lisus and two Nungs joined us; but of the sixteen Tarons, not one appeared, nor did they come in that night.

On taking stock of our property, I found that my bedding was present, and a box containing some of my specimens; but we had nothing to eat. We lit a large fire, and settled down in the snow to wait for day light and get what sleep we could in the meantime; I felt certain that darkness had overtaken the Taron contingent before they were able to reach our camp (for we had made a rather long march, considering that the going in the snow was none too easy), and that they had settled down for the night at the first clump of Fir trees, about an hour's climb from where we were. *F. Kingdon Ward.*

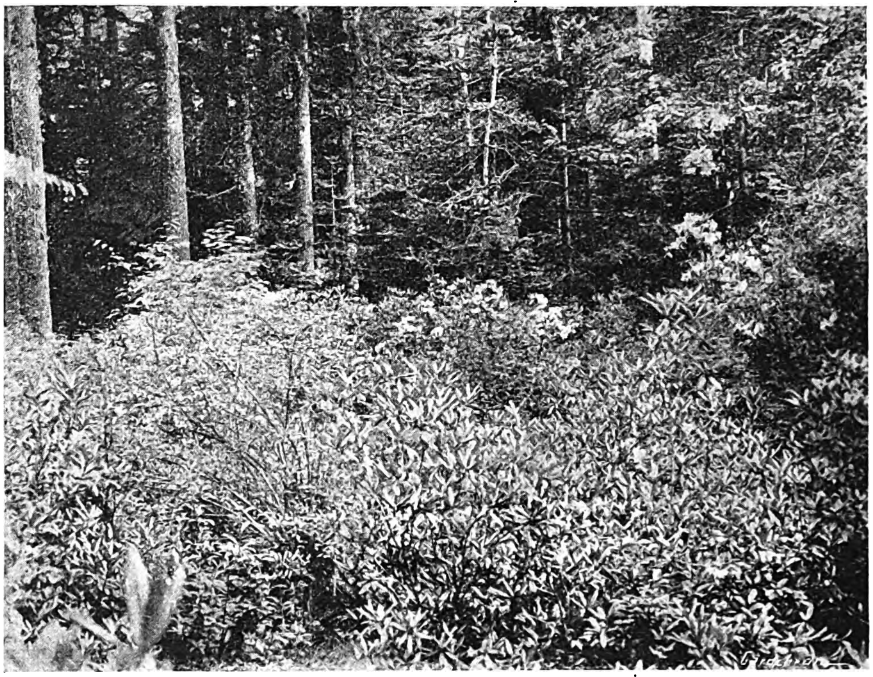

FIG. 253.—RHODODENDRON SP. (§ HELIOPSIS) AND ABIES FOREST.

NOTES FROM A WELSH GARDEN.

COTONEASTERS have borne a wonderful crop of berries this season, and there can be few, if any, genera which will give such a good return in ornamental fruits for so long a period as this one. Beginning with C. adpressa var. praecox, with large red berries coloured early in August, even a moderate collection will maintain a display until February. C. pannosa, for example, is only now (mid-December) beginning to look its best, and the beautiful, soft, grey-green foliage of this handsome species is exceedingly attractive when every elegantly sweeping bough is hung with clusters of blood-crimson fruits.

Taking both leaf-colour and berrying into consideration, C. horizontalis is still, I think, without a rival in its own way. Grown in bush form in the open, with plenty of space for development, this fine old shrub can be remarkably effective. The foliage assumes a rich and glossy plum-purple hue, while the brilliant scarlet berries will (in the absence of birds and mice) adorn the fish-bone branches until Christmas. In this garden the crop is very soon cleared, but, oddly enough, a form of C. horizontalis which is in every way as good as the type never loses a berry. This shrub is grown in the same way as the common one, save that it is covering a gentle slope, whereas the other is on the flat. Yet, while the species was stripped so soon as the berries coloured, this variety is still covered with fruits which it will retain until hard frost comes. Here, then, is a pretty problem for the naturalist as well as for the scientific gardener.

Owing to the wet summer and autumn. most of the Berberises which one looks to for berry and leaf tints were late in colouring. Or perhaps, it would be nearer the truth to say that they were later than usual, for I am beginning to feel that these shrubs—the newer Chinese species and hybrids—would be much more valuable if they could be induced to ripen their crop a few weeks earlier than is their habit. For the last two or three seasons they have scarcely attained their full beauty before a November frost has arrived to destroy it; and it does not require many degrees of frost to reduce the lovely, translucent, pink berries of B. polyantha, B. Prattii or B. aggregata to pulpy masses of a harsh, unpleasant red; and the foliage colour of such of these is even more ephemeral in such autumns as we have had in recent years. B. dictyophylla is a notable exception, for if it cannot compare with some of its allies as a fruiting species its foliage is wonderfully brilliant and, what is more, it is retained well into the winter.

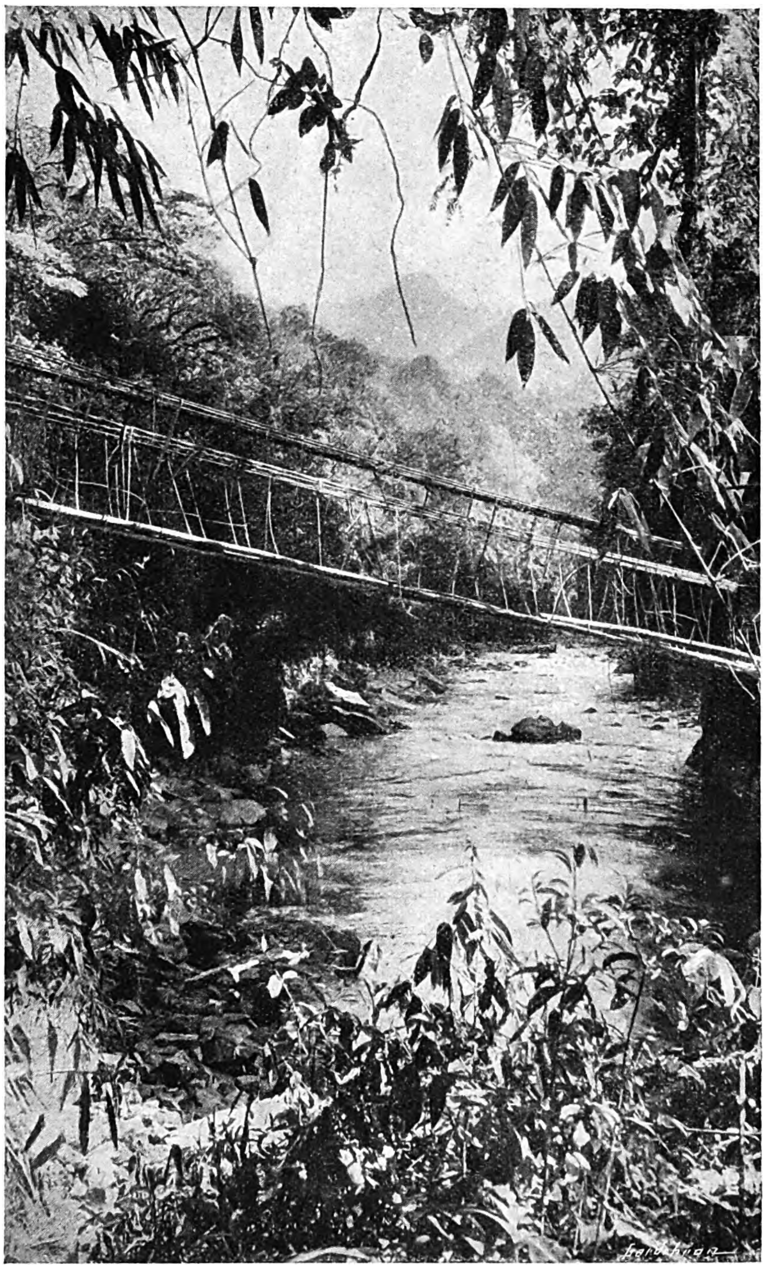

FIG. 254.—CANE SUSPENSION BRIDGE; HEADQUARTERS OF THE IRRAWADDY.

Whether one regards it as a species or not, Spiraea japonica var. alba (S. callosa alba) is as distinct at this season as at any other, every leaf being rich yellow. This foliage is, moreover, much more persistent than that of the other varieties of S. japonica grown here. Neillia (Spiraea) opulifolia is a shrub of charming habit which also colours a really good yellow and retains its foliage until the later autumn. If the golden-leaved form, N. o. var. lutea, is grown, the spring leafage will be almost as bright as its autumnal tint, and few shrubs of the kind are more delightful against a dark background during those two seasons.

The Grevilleas never fail in their cheerfulness at this time of year. Though we had enough frost last month to cut down the big Gunneras and make the Osmundas turn colour in a single night, these courageous Australian shrubs suffered no harm. To-day (December 15), G. rosmarinifolia is bearing quantities of its crimson flowers. G. sulphurea is tufted with its jaunty cockades in ivory-yellow, and the grey-green foliage of G. alpina is flecked with a keen rose-pink. These hearty shrubs, growing quite in the open on a Heath slope, have never given me the slightest cause for anxiety during the hardest winters.

Erica darleyensis had its first flowers fully open by the third week of November. As Daböecia polifolia alba was in bloom at the time—and it still is—these two serve to complete the cycle of the Heath garden's year. They join-up, as it were, the ends of that annual chain of blossom which even a moderate collection of Heaths will maintain unbroken throughout every month of the twelve. E. darleyensis may not be so fine a plant as either of its parents, E. carnea and E. mediterranea, but even supposing that such comparisons were reasonable and justified, this hybrid is an invaluable plant. Its fresh, shell-pink colour is singularly beautiful, it is good in habit, hard as nails, very amenable to almost any soil or situation, and it flowers bountifully at the dreariest season of the year. Because of these admirable attributes there are a hundred choicer, more costly, shrubs that I would willingly forego for E. darleyensis.

It is from this time onwards, throughout the winter, that many grey- or golden-leaved evergreens become most attractive. Some of the Senecios, such as S. laxifolius, S. Greyi and S. Munroana have their foliage more densely felted with white than they had during summer; and the contrast between the green upper surfaces and the creamy-white underparts in such species as S. rotundifolia is never so strongly marked as it is to-day. That excellent little Scotch Pine, Pinus sylvestris aurea, offers another example. A few weeks ago it was wearing its summer green; now, every needle is gleaming like polished brass. In the Oleasters the same process is noted, whether the predominating tint is silver or gold, or both. The large-leaved Elaeagnus macrophylla, perhaps the handsomest of the genus, is one of these. In these species the young foliage and unripened wood, as well as the under-surfaces of the leaves, are silvered with a metallic lustre. Even the little, nodding, tubular blossoms, which are now announcing their presence by imparting a Vanilla-like fragrance to the wintry air, are sheathed in silvery scales.

Whether Symphoricarpus orbiculatus blooms and fruits in other gardens I do not know, but I cannot remember ever having seen its purple berries in this part of the country. Like a good many American shrubs, our summers are rarely sunny enough for it. Here I only grow S. o. var. variegata, a quaint, little shrub which is accorded hospitality on sentimental grounds, since it is one of those ornaments of old gardens which seem to be uncommon. With us the variety is particularly evergreen, carrying a few leaves throughout the winter. It has never shown any inclination towards suckering.

A spell of mild weather, even so late as this, induces that wonderful plant, Gentiana sino-ornata, to expand the last of its buds, and it is odd to see these sapphire trumpets bidding farewell to the old year while, in the same bed, Winter Aconites are announcing the advent the new. Save for these, there would be little of flower colour left in the lower and damper parts of the garden. But the Kaempfer Irises are slashed with vivid yellow, the tall, upright stems of the Lythrums are a rich red-brown, and the seed-heads of Astilbes and herbaceous Spiraeas glow with warm shades of russet and umber. These may suggest that a wet autumn has thrown seasonable work into arrears, or they may afford a useful excuse for neglect. But as there is no avoiding the fact that such things have their value in the garden during the darkest hours of the year, their removal is deferred so long as possible. *A. T. Johnson, Ro Wen, Conway, North Wales.*

IDEAL GARDENS AND PLANT LORE.

The Garden of the Madonna.

(Concluded from page 509.)

While we shall be very careful how we introduce the Convolvulus into our garden, we shall certainly wish to find it a place, not only because of its handsome blossoms, but because they bear the very appropriate name of Our Lady's Nightcap. This is much more pleasing, though not more suggestive than the English name which is represented in German by Teufelsdarm, a term which is also applied in both countries to the Dodder, and for the same reason. These plants belong also to the same Order (Convolvulaceae). Among the Boraginaceae we find the well-known Lungwort or Pulmonaria with its spotted leaves. This is in Germany Unser Lieben Frauen Milchkraut, and bears with us such names as Mary's Tears, Lady's Pincushion, Lady's Milkwort and Lady's

Milksile. To what has already been said respecting the latter term we may add one other interesting item of plant-lore. Under Virgin Mary's Milk Drops, Mr. Britten quotes the following from a letter by Dr. T. Smart of Salisbury :—

"I had an old woman weeding in my garden, and proposed to her to turn out a plant or two of it (Pulmonaria), to which she strongly objected, and said, 'Do 'ee know, Sir, what they white spots be?' 'No, I don't.' 'Why, they be the Virgin Mary's milk! so don't 'ee turn 'em out, for it would be very unlucky!'"

With reference to the name Mary's Tears, Miss E. M. Payne writes from Dorset that it comes from a legend :—"That some tears from the Virgin Mary, falling on the leaves of that plant, occasioned the white blotches on them; and that from her excessive weeping one eye which before was blue became red, in consequence of which the plant has since borne flowers of the two colours."

It is a thousand pities that the Forget-me-not, so far as I am aware, has not any association with Mary, and must therefore be excluded from our garden of Madonna blooms. All the members of the Order Solanaceae are of too sinister and poisonous a nature to find a place here, so we pass on to the Scrophulariacae. Among the Mulleins we find that one is dedicated to Mary under the names Virgin Mary's Candle and Our Lady's Foxglove, names which find their counterpart in the German Frauenkerze or Kerss, Marienkerzen, Frauachunkla and Marienrosen. The Foxglove is Our Lady's Glove or Thimble, a name which is also given to the blossoms of the Campanula, Harebell or Bluebell.

We are glad to be able to introduce our Garden Mint (Mentha Viridis, L.) here, since it is associated with the Nativity under the name Sage of Bethlem, while in Germany it is called Unser Frauen Minze, and another species is named Marienmynte. Among the Primulas we find more than one which has an association with Madonna. Such names as Our Lady's Keys and Lady's Fingers are applied to the Oxlip and Cowslip, agreeing with such German names as Frauenschühli, Fraulischlössli, and Fruabluamli, where the final syllable is diminutive, or a sign of tender feeling and affection. Thrift (Armeria) as we have seen, is Our Lady's Cushion or Pincushion, and the Persicary (Polygonum Persicaria) is the Virgin Mary's Pinchweed. Mr. Britten who gives this in his Dictionary of English Plant Names (p. 481-2) quotes my original account, and confirms it by a reference to *Notes and Queries*. In Oxfordshire, I heard (at Fritwell) from a native, in 1883, the legend that the Virgin used it to make an unguent, but on one occasion she sought it in vain.

"She could not find in time of need,
And so she pinched it for a weed."

Ever since the leaf has borne a mark in the centre showing where the thumb of the Virgin pressed it. The plant grows freely in neglected gardens; it may now be given a place of honour, the more so as this, or a closely allied species, is named Marienkrüd (Kraut) in Altmark.

When we pass to the Monocotyledons we find several which belong to our Madonna Garden. Best-known of all, probably, is the Lady's Slipper, or Cypripedium. This beautiful Orchid is now known in many forms, the gardener's art having brought it to a very high state of perfection. Another Orchid (Spiranthes) bears the name of Lady's Tresses. Marien-drehen is a German synonym for the latter, while for the former we have such popular forms as Frauaschüeli, Frauenschüh with diminutives, and Frauschuckelblume on the one hand, and Marienschuh, Marienschoiken, with variants, on the other. The Snowdrop is of old dedicated to the Holy Mother, and is often known as Fair Maid of February. Tradition affirms that it blooms on Candlemas Day, which is the festival of the Presentation of Christ in the Temple. On the day of the Purification of the Virgin Mary her image is removed from the altar and Snowdrops strewn over the vacant place. Hence it is called Purification Flower and Candlemas Bells. The Lily-of-the-Valley is our Lady's Tears, and Solomon's Seal is sometimes regarded as a Madonna flower, bearing the name of Lady's Seal, the German Mariensiegel, while the Snowdrop is Marienschelle, or Marienglöckchen, and Narcissus, the Lily of Mary. The Star of Bethlehem can hardly be denied a place here, and a few other plants belonging to this group might rightly claim inclusion.

Among grasses, we have the Feather Grass (Stipa pennata, L.), "a beautiful plant with remarkably long awns, common in gardens," as Babbington's *Flora* remarks. In German it is Marienflachs, which recalls the English Lady's Lint, a name for Stitchwort. The variegated form of Canary Grass (Phalaris arundinacea, L.) is known in Cheshire and Salop as Lady Grass, but this may be in allusion to its graceful form, and not to the Madonna. It is also called Lady's Ribands and Lady's Grass. But Lady's Hair, as a name for the Doddering or Quaking Grass (Briza) is genuine. Gerarde writes of it as Our Ladie's Hair, a name which is also given to the Maidenhair Fern. And this brings us to notice that in "Denmark, Norway and Iceland they give the name of Mariengras (Herb of Mary) to different Ferns, and in those countries Mary often replaces the Goddess Freyja, the Venus of the North, in the names of flowers."

In conclusion. I may quote from my note book under Lady Locket. "In Derbyshire, when the children gather the Lady's Smock, they sing :—

Lady Locket lost her pocket
In a shower of rain,
Milner fun it, Milner grun it,
In a peck o' grain."

Milner, of course, is the miller, while "fun" and "grun" stand for found and ground. *Hilderic Friend.*

NOTICES OF BOOKS.

The Beginner's Garden.*

THIS book has been compiled for the benefit of the garden novice of the United States of America. We write "compiled" advisedly, because Mrs. Francis King, in her preface, makes due acknowledgments to five current periodicals. But a book is none the worse for the fact that much of it has appeared elsewhere previously. While Mrs. King cannot be termed the Miss Gertrude Jekyll of America, she writes entertainingly for the amateur who contemplates making a small garden. Her enthusiasm, at times, seems to run away with her pen, and she becomes a trifle breathless, but there are many schemes and suggestions for garden making and planting which her transatlantic readers will, no doubt, find of interest. The book is well printed, and the half-tone illustrations and planting plans add to its value.

Dahlias and Gladioli.†

AT first glance there would seem to be no particular reason why Dahlias and Gladioli should be combined to make a book, except that there is, perhaps, scarcely enough to be said about either (without shameless padding) to fill a saleable volume. Certainly the book now before us is of respectable size, though the price is rather high, probably on account of the twelve coloured plates with which it is adorned. Dahlias monopolise the better half of the book, and a Dahlia in colours enlivens the sober brown of the stiff linen cover. Until the last few years, the Dahlia suffered under a slight cloud of disapproval; growers disliked it for the tiresome habit of the flowers, which insisted on hanging their heads down and tucking them under the foliage; amateurs because they bore the reputation of being "earwiggy." Lately, largely due to the efforts of a few far-seeing growers, such as Cheal's on this side of the Channel, and Martin on the other, the Dahlia has left most of its defects behind, and—especially in "star" form—has forced its way to the hearts of flower lovers and into the nurseries of every florist. Books about Dahlias are, however, still more or less of a rarity, and the present one, written by so good an authority as Herr Sandhack (who is in charge of the celebrated Schulenburg nursery in Gera) will be welcomed in many quarters.

Of the portion about Gladioli we can write with equal praise, and here it may truly be stated that Herr Sandhack is breaking new ground. The literature of the Gladiolus is very small indeed, and the present book, with its clear, lucid directions and excellent photographs (both black and white and coloured) and diagrams, makes a very welcome addition to the few volumes available for the guidance of the Gladiolus grower. In both parts of the book, pests and diseases come in for a good share of attention, and there are useful lists of varieties. So satisfactory, indeed, is the book that the lack of an index appears to be its only defect.

Roumania.*

THOUGH Mrs. Martineau's book* is mainly a chronicle of a visit she was privileged to pay to the late King Ferdinand of Roumania and his consort, who sought her advice and aid in the arrangement of the royal gardens, it would hardly be possible for the author to write a book without mention of flowers; so, interspersed with intimate sketches of the life of the Roumanian royal family at one or other of the residences, gardeners will find enough about the flora of the Carpathians to whet their appetite for a good deal more. Like the late King of Bulgaria, Ferdinand of Roumania knew the flora of his kingdom intimately. The author, therefore, had opportunities of seeing the wild flowers of the Carpathians under peculiarly favourable conditions, and was evidently struck by the wonderful colouring of the flowers. "Roumania is a land of Roses, the soil rich and deep, being the alluvial deposit of the Danube. The Roses, Paeonies and Irises grow to a size and possess a colour and scent impossible in any other country . . . . whether it is due to the peculiar soil or not I do not know, but the Willow Gentian, which is generally of a slate blue colour in England, is of brilliant blue in Roumania, and all the flowers seem to be intensified in colour."

Roumania is clearly an earthly paradise of flowers, for when Mrs. Martineau proposed an herbaceous border in one of the royal gardens, she found nearly every flower she suggested vetoed because it was a wild flower in Roumania, "where you may see miles and miles of the purple Salvia nemorosa virgata and many another . . . . Irises grow wild in quantities in the woods here, and many other flowers only seen in the herbaceous border in England, such as Astrantias, Potentillas, Larkspurs and Campanulas." And there is a wild Paeony of which we should like to know more, though we suspect it of being an old friend. "The flower is single, of a brilliant scarlet, and with a crown in the centre of bright yellow stamens." Mrs. Martineau's account of the flowers of Roumania should send many keen gardeners to that country next spring.

DWARF TREES IN THE ROCK GARDEN.

THE planting of dwarf trees, mostly of an evergreen character, serves a useful purpose in all extensive rock gardens, and probably the most popular subjects for the purpose are the dwarf Conifers. Such plants are considered to represent the dwarfed character of trees found growing in alpine altitudes; they serve also, to some extent, to relieve winter bareness and, finally, become good backgrounds for groups of choice flowering plants.

In a rock garden of large dimensions there is naturally room for trees which finally attain considerable size, but in the small rock garden it is important that the choice should be restricted to those species and varieties which are known to be of slow growth and more or less stunted habit.

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* *The Beginner's Garden*, by Mrs. Francis King (7s. 6d. net). Messrs. Charles Scribner's Sons, New York and London.

† *Dahlien und Gladiolen.* Von Herm. A. Sandhack. Berlin, Verlag Paul Parey, Hedemannstrasse, 10–11. Paper RM. 18, bound RM. 22.

* *Roumania and her Rulers*, by Mrs. Philip Martineau. Stanley Paul (1927). 10s. 6d. net.

But even some of these have a tendency to lose their dwarfness after a number of years, and become unsuitable. A variety of the common Spruce, Picea excelsa prostrata, for example, grows slowly at first, but after a period of ten or twelve years it has a tendency to make more rapid growth, and loses, to some extent, its prostrate habit. P. e. globosa nana is a good plant, making a rounded hummock of stunted growth, and P. e. pygmaea is a diminutive variety of pyramidal shape.

The Cypresses, generally, are too free-growing for this purpose, but Cupressus obtusa has two or three varieties of dwarf character which seldom reach more than two or three feet in height. C. o. compacta, C. o. nana and C. o. pygmaea are all good dwarf varieties of very slow growth, while C. o. nana aurea is a small, dense-growing plant with golden foliage. C. pisifera also has one or two coloured varieties of merit, notably C. p. aurea nana, with dense, rounded bushes of golden foliage, and C. p. ericoides, a greyish-leaved plant of more upright habit but restricted growth. Another grey-foliaged plant of considerable merit is C. Lawsoniana Fletcheri, which forms a pyramid of plumose habit and is slow-growing, while Rheingold is a variety that makes a small, dense bush and has attractive golden foliage.

There are one or two Pinuses of very dwarf habit which may be planted with effect in the rock garden, notably P. Mughus nanus, probably the dwarfest of the mountain Pines, and P. montana pumilio, a small, dense bush.

Thuya occidentalis provides dwarf varieties in globosa which forms a dwarf, dense, globular bush, and pygmaea, a compact, miniature variety; while of T. orientalis the varieties compacta and ericoides are dwarf and slow-growing.

Among the Junipers there are several species and varieties admirably adapted to positions in the rock garden. J. communis alpina, the alpine Juniper, is of prostrate habit and seldom exceeds a foot in height. J. Sabina and several of its varieties are useful for planting where a low covering is needed, as also is J. squamata, the scaly-leaved Nepal Juniper. J. communis fastigiata—known as hibernica—is probably the neatest of all Conifers. It forms a slender, columnar tree, its numerous, rigid, close-set branches being clothed with short, deep-green leaves which give the plant a handsome appearance. *W. Auton.*

ALPINE GARDEN.

GYPSOPHILA FRATENSIS.

Under this name, a small plant that was put into cool, gritty soil, two years ago, now covers nearly a square yard with a close, dense carpet of its glaucous foliage. The trailing, perfectly prostrate stems seem to delight in draping the face of a sloping rock, but they will hang over a wall with equal good will. The flowers of G. fratensis, which appear from the later spring onwards, are borne on six-inch to eight-inch sprays, and they are a cheerful rose-pink, which is peculiarly in harmony with the bluish tint of the foliage. This alpine is quite hardy and wet, wintry weather does not seem to affect it. *A. T. J.*

ERINUS ALPINUS.

It may appear superfluous to write of the Erinus, but experience has taught me that it is often necessary to keep certain plants before the public, or they will not find their way into as many gardens as their merits would warrant. The little Erinus is one of those plants, and a few lines in its favour may be of service. To those who know it not it may be described as a little tufted plant only about six inches high, with small, neatly-formed leaves and heads of little flowers produced for a long time in succession, beginning in spring and lasting for a long time. The flowers of the type are purplish, but there are rose, carmine, and white forms, seeds of some of which may be obtained separately.

In addition to E. alpinus there is another species named variously E. hispanicus and E. hirsutus, which is more densely covered with hairs and is of slightly taller and looser habit The ideal place for these Erinuses is in the chinks of a wall, where it will spread and increase by self-sown seedlings. It does well in the crevices of rockwork also, but in some places dies off, when on the level, in a wet winter, but this is unusual. A big mass of it on an old wall looks delightful; and the writer still bears in his mind's eye the picture presented by an old, high wall by the sea in which an Erinus had been thoroughly established, and where there were myriads of the bright little flowers fully open, to the great adornment of the old, dark, sandstone structure. *S.*

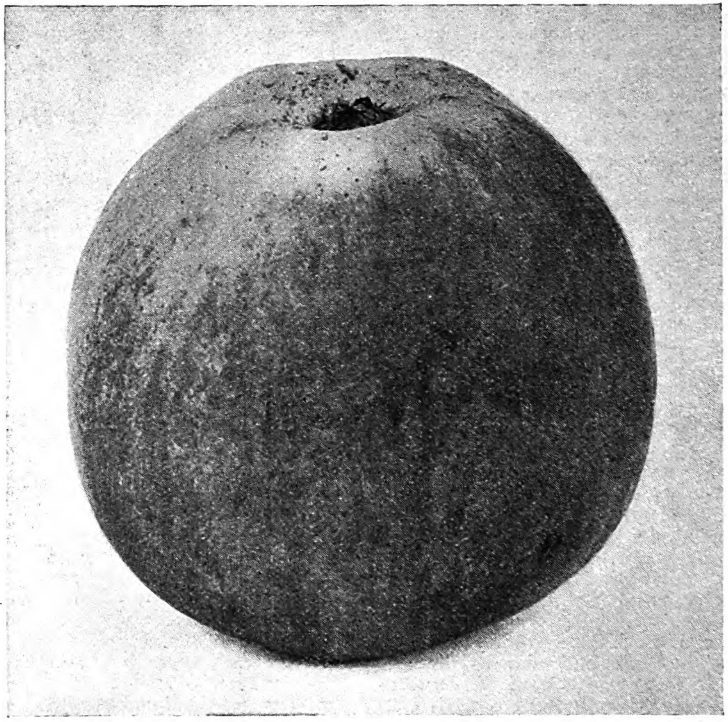

FIG. 255.—APPLE SOPS IN WINE.

FRUIT REGISTER.

APPLE SOPS IN WINE.

This very old Apple is known to most West Country people, and almost every cultivator of Apples must have seen it or heard about it. Nevertheless, it is a comparatively rare variety in gardens, and seldom makes an appearance at exhibitions. Its outstanding peculiarity is the deep red colour of the flesh, which, as the name suggests, looks as though it had been dipped in and had absorbed red wine. Well-grown fruits (Fig. 255) are of medium size, and the skin has varnished patches of deep crimson among the yellow and often russetted ground colour. The fruits are quite handsome when well-grown and well-coloured, and the flavour is pleasing, although by no means first-class when Cox's Orange Pippin is taken as the standard of flavour. At a recent meeting of the Royal Horticultural Society, Messrs. Stuart Low and Co. exhibited a few very fine specimens of this Apple, and these examples attracted a great deal of attention by reason of their colour and attractive appearance.

Whether a red-fleshed Apple of moderate flavour would ever become popular is a matter that only experience can decide. If Sops in Wine could be worked on a stock that would enhance its flavour and appearance, without reducing the colour of the flesh, there ought to be a moderate demand for the fruits, as there are many people who like to have things different from the majority.

Sops in Wine is usable from October to February. The tree is stated to be very hardy, vigorous and free-bearing. Dr. Hogg records that trees of this variety are not subject to canker. The experiences of growers in regard to this variety would be welcome. *C.*

HOME CORRESPONDENCE.

Birds and Fruit.—It is easy enough to see the damage done by tits to our best Apples and Pears; if it were not for muslin bags, or old muslin curtains cut into squares and tied on, I would not have an October or November Pear or Apple that was not pecked. It is not so easy to see the good the tits do. Still, I am all for the tits. I put boxes in my fruit trees for them to nest in, and in the winter I carry Nuts in my pocket, which they gladly come and ask for; I have great tits, blue tits and cole tits. I know them all, and they know me. To watch them feeding their young is to get a faint idea of the amount of insect life they must destroy in the year; all day long the parents bring caterpillars and other things not so easy to recognise; I am glad to say they have to go to my neighbour's gardens for their provisions. The time I like best to see them is when the birds are busy amongst the blossoming trees; when I see them pecking at a bud I feel sure there is a grub there. I feel sure, but I cannot prove it; but such is my faith. Good luck to the tits. The more of them the better, but plenty of muslin bags must be put on when the choice Apples and Pears are ripening. *R. R. H. Moore, Painswick Lodge, Cheltenham.*

Lathyrus tuberosus, L.—When reading the pages of *The Gardeners' Chronicle*, I was pleased to notice the record of Lathyrus tuberosus for Gloucestershire. The plant is recorded as an alien in White's *Flora of Bristol*, but it appears to be known in many places in the Severn Valley, and Schoolbred included it from Lydney in his *Chepstow Flora*. Mr. Nicholson (*l. c.*) adds some other habitats, but I may state that for some years it grew in a wild piece of ground amid the Chiltern Woods in Oxfordshire, near Pippard, and that last year I saw it as an alien at Burton-on-Trent, in Staffordshire. Once I got a labourer to dig me a root from the well-known Essex locality at Fyfield. I planted it in my garden, and the following year appeared the large Vetch Vicia amoena which I had never seen before ! *G. Claridge Druce.*

Wild Birds and Garden Peas.—I recently published a letter in your esteemed contemporary *Country Life* (December 3) instancing a case where the theft of garden Peas was conclusively shown to be the work of the long-tailed field mouse, and one of your readers asks me to repeat the statement in your valuable paper. He writes: "I was told that the tits were eating my Peas, but, of course, did not for a moment believe it, but set three mouse traps (break-backs) in drain pipes. We caught eighteen long-tailed field mice and no more Peas were taken." I know of few birds that haunt our gardens in any numbers that do more good than the blue-tit and the great tit. Forty-five years ago, Yarrell stated that gardeners and others "see it (the blue-tit) busily at work on a fruit tree, bud after bud coming under its scrutiny, while the prospective covering of each drops on the ground and shows the destruction done. Content with such imperfect evidence, they go their way vowing vengence on the blue cap. . . . Yet none can be more mistaken than these men." This statement is truer to-day than ever, for we now have detailed volumetric analyses of the stomach contents of large numbers of specimens, showing that only ten per cent. of the food of the two above-mentioned species is injurious, whilst of injurious insects they consume 78 per cent. and 66.5 per cent. respectively. Surely such friends are worthy of every protection. *Walter E. Collinge, The Yorkshire Museum, York.*

Culinary Peas and Superphosphates.—Mr. Copley advocates spreading superphosphate in the drills when seeds of culinary Peas are sown, but I cannot agree that this would be very beneficial to the growth of the seedling, because when seeds germinate the roots are very fine, therefore a dressing of superphosphate would be rather strong food. Mr. Copley also states that he is under the impression that superphosphate aids the formation of roots, but roots are formed by the plant to search for and absorb food, therefore, if the food is close at hand there is no need for foraging. I do not think superphosphate would encourage the formation of roots ; indeed, roots are formed more freely in a poor soil than in a rich one. As the Pea is a very deep-rooting plant it would not get much—if any—benefit from the superphosphate when it is fully grown. I am inclined to agree with Mr. Roy that superphosphate should not be spread in the drills when sowing seeds of any kind. *Gavin Brown, Craigo House Gardens, Montrose.*

——Without wishing to intervene between Mr. Copley and Mr. Grigor Roy, I may, perhaps, be permitted to state that while Mr. Roy is perfectly right in uttering a warning against bringing superphosphate into contact with certain vegetables, such as Peas, he is probably wrong in supposing that Potato sets are injured by it, certainly when mixed with sulphate of potash, as he rightly suggests. I have used this mixture, plus sulphate of ammonia, so many times on so many different soils for so many years without injury that I think he must be diagnosing his Potato trouble incorrectly. Whether Potato "seed" is cut or uncut (and even if it is cut to single eyes), it remains uninjured. So far from this invaluable chemical fertiliser being dangerous I think it is doubly beneficial, not only feeding the crop but repelling slugs. I think the proper plan, if the fertiliser is used at planting time, is to spread it in the freshly-opened drills and lay the Potatos on it. Ground pests will not then attack them, while the food will quickly become available. I am glad Mr. Roy points out the difference of grade in superphosphates. I always use the thirty-five per cent. grade. *W. P. W.*

SOCIETIES.

ROYAL SCOTTISH ARBORICULTURAL.

(Aberdeen Branch.)

The annual meeting of the members of the Aberdeen Branch of the Royal Scottish Arboricultural Society was held in Aberdeen on Saturday, 17th inst., Mr. John Michie, M.V.O., President, in the chair. The chief feature of the proceedings was a finely reasoned address by Mr. C. S. France, Aberdeen, on Forestry, Past and Present. A practical forester, now far advanced in years, Mr. France wholeheartedly devotes the evenings of his life to the welfare, interests and advancement of his beloved profession. He was one of the original founders of the Aberdeen branch, and read the first paper at the inaugural meeting in 1906, has been President of the branch, and an active member of the executive right from the start. He has had a wide experience of practical forestry in Scotland and in Ireland, and is most anxious that for the degree of B.Sc. in forestry it shall be essential to include practical training in the forests for one or two years.

Mr. France opened his address by saying he was not inclined to accept the sweeping assertion, so widely made, that forest management in the past had been neglected. He admitted that what was now designated the sylvicultural aspect of forestry was neglected, because the conditions and requirements of the past did not demand an advanced and economically sound system of forest management. Most of the forest lands were in the hands of private individuals and were afforested more for shelter and possibly for game coverts. The economic aspect was overlooked, except in some of the larger, wooded estates, where the profitable management of woodlands was not neglected. Forestry, he held, was dependent upon the necessities and requirements of the particular country. This was strikingly illustrated in Germany and France, where the most forest land was under national control. Under these conditions, so different from our own, it was necessary to systematise and methodise the conservation of wooded lands.

Proceeding, Mr. France admitted that the experience of recent years had revealed the fact that a different system of forest management is not only necessary but essential, and that, had more economic methods been adopted earlier, as well as an extended system of afforestation of waste land, we would have been in a much better position to-day. With all that, however, when they considered the huge amount of timber supplied by this country during the Great War, it had to be admitted that the hitherto arboricultural system of forestry had its merits, as well as its defects. He would place the renaissance of forestry in this country at about 1850. Since then, he contended, rapid strides had been made until the subject had now become quite an absorbing national question.

The speaker then proceeded to refer to the educational side of forestry, and pointed to what he considered a defect in the present system of forestry education in our universities. It was all very well to acquire a wide knowledge through excellent lectures in the class-rooms, but unless the student had acquired practical knowledge by personal training and work in the forest, he was only half a forester. It was not only necessary to know what was to be done in a given case, but to know how and when it should be done. Hence, he considered that one of the essential points in the examination for the B.Sc. degree in forestry should be a thorough, practical training of one or two years in the forest. In conclusion, Mr. France expressed his satisfaction at the prospect of a continuance in the work of forestry from a national point of view, but held it was necessary to guard against too hard-and-fast methods. Government, or semi-Government officers were liable to run into what might be called "red tape" methods of precedure, and thereby, in many cases, likely to do more harm than good. There must be a certain elasticity of operation if the work was to be sound. He had no doubt these considerations had already had some attention from those responsible for the prosecution of this great national work.

The Chairman, in paying a warm compliment to Mr. France, for his shrewd and sensible comments, said he was in complete agreement with him about the Scottish woods, in particular, being originally planted for the benefit of game. In England, however, large plantations of Oak were laid down for the purposes of providing timber for naval construction. Those days were past and the English forests had gradually declined.

Professor A. W. Borthwick, of the Chair of Forestry at Aberdeen University, dealt with Mr. France's references to educational facilities. After paying a warm tribute to Mr. France and other pioneer, practical foresters, for the quiet but sound sylvicultural work they did in laying the foundations for the establishment of woods and forests—producing a quality of timber second to none—said he was sure that all engaged in the teaching of forestry were thoroughly agreed that the practical aspect must be linked up with the scientific and the theoretical aspects. Whatever was done elsewhere they had in Aberdeen a system of practical training. The students go out into the forests and plantations by arrangement with the Forestry Commission, and do the actual planting, surveying, and nursery operations at different seasons of the year. So far, therefore, as the practice of forestry could be taught in Scotland, they were taking full advantage of it. Theoretical and scientific forestry led to progress, of course, through research, and that, combined with practice, was the ideal. It is the intention concluded Professor Borthwick, to hold a summer school next June to enable apprentice foresters to learn the theoretical principles and foundations of scientific sylviculture, a linking up of the two educational systems which cannot fail to produce the best results. Professor Borthwick's intimation was very warmly applauded.

The meeting then proceeded to the election of office-bearers for the ensuing year, as follows: President, Mr. John Michie, M.V.O.; Vice-Presidents, Lord Forbes of Castle Forbes, Mr. S. J. Gammell of Countesswells, Major R. J. Nicol of Ballogie, and Provost Donald Munro, Banchory; Secretary and Treasurer, Mr. G. D. Massie, Aberdeen; Messrs. C. S. France, Neil McGregor and Charles Stewart were re-elected to the Committee, and Professor Borthwick was appointed to the vacancy in the Committee caused by the death of Mr. James Ward, forester, Keith. The proceedings concluded with the gratifying announcement made by the Chairman that the membership of the branch had increased during the year from 169 to 183.

Obituary.

William Landsborough.—The death is reported of Mr. William Landsborough, nurseryman, Kilmarnock, on Thursday, December 22, after an illness extending over the past two months. Deceased gained his experience at Ardwell, Kirkcudbrightshire, where he served his apprenticeship, and later at Newfield, Kilmarnock. After serving as head gardener on a Bearsden estate he returned to Kilmarnock, where he established a florist's and nurseryman's business over twenty years ago. In his earlier years he was a successful competitor at the leading horticultural shows, and although he took no active part in public affairs he was highly respected in the community.

TRADE NOTE.

Patents and Trade Marks.—Any of our readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

ANSWERS TO CORRESPONDENTS.

NAMES OF PLANTS.—*J. B.* Euonymus japonicus var. albo-marginatus. The different colouring of the young growth is quite a common occurrence.—*H. E.* 1, Impatiens Sultanii; 2, Symphytum tuberosum; 3, Senecio laxifolius; 4, Pulmonaria saccharata; 5, Ligustrum sinense; 6, Leycesteria formosa.

NAMES OF FRUIT.—*W. L.* 1, Dumelow's Seedling; 2, Histon Favourite.—*F. A. A.* 1, Scarlet Nonpareil; 2, Sandringham; 3, Nonesuch; 4, Roundway's Magnum Bonum; 5, Blenheim Pippin; 6, Jolly Beggar; 7, Easter Pippin (syn. French Crab); 8, Dutch Codlin; 9, Small's Admirable.—*W. J. B. Upham.* 1, Court Pendû Plat; 2, Royal Russet; 3, Pile's Russet.

NERINE BOWDENII.—*M. A.* It is quite an easy matter and well worth while to raise Nerine Bowdenii from seeds. These should be sown so soon as they are ripe, in a light, sandy compost. The seedlings grow quite well in an ordinary greenhouse, and should flower in about three years from seed-sowing.

NIGHT SOIL.—*I. R.* There is no modern book dealing with night soil and its uses, so far as we know. Most towns of any size, and even small ones, have sewage works nowadays, and human excreta goes down the sewers. All the same, you can make use of the supply you get, if you have a field or piece of ground at some distance from dwelling-houses, to avoid trouble with the inhabitants or local authorities. The best plan is to lay up long ridges of soil and hollow them out along the centre. Cross ridges should be made here and there to form the long trenches into compartments. Some sort of cart should be employed to convey the liquid and solid matter. This, backed close to the ridge, would allow the liquid to run into the trench by means of a sluice or wide spout. The solids can then be tipped into the trench. When one compartment is full, it could be deodorised by means of chloride of lime. When most of the liquid has sunk into the soil, each section of the trench should be covered over with a good layer of earth, after which little or no odour will be discernible, provided the material is not dropped about outside the trench. It should lie in the trenches for six months or more, after which the ridge could be turned over and the soil and night soil mixed together. By this time the materials will be solid, and will dry further by the turning. When digging or trenching is proceeding, a man may wheel a fair quantity to each trench, thus keeping the ground clean for those who are digging. This will make good manure for all the Cabbage tribe, Turnips, Onions, Leeks, Rhubarb, fruit trees and fruit bushes. Night soil is too rich in nitrogen to be used except in a small amount, or not at all, for Peas or Beans of any sort. The daily supply could be put in trenches as above stated. Iron tanks would soon rust, but zinc ones would be more durable. (2) *The Horticultural Note Book,* by J. C. Newsham, is obtainable (if not out of print) from Messrs. Crosby, Lockwood and Son, 7, Stationers' Hall Court, Ludgate Hill, London. They have many books on technical subjects, and you could communicate with them and let them know your wants. Try Messrs. L. Upcott Gill, Windsor House, Bream's Buildings, London, E.C.4, for the *Intensive Culture of Vegetables* (French System).

Communications Received.—R. C. B.—J. D.—J. W.—J. A. P.—S. A.—H. F.—W. G.—J. O'B.—W. B.—C. E.—H. E. D.—H. G.—J. B.—C. S.—W. R. J.—W. P. M.—G. T. D.—D. C.—M. C. R.—J. R. A.—T. J.—R. F. C.

GARDENING APPOINTMENT.

Mr. William Stenhouse, who has been in charge of Messrs. SAMSON'S Nursery, at London Road, Kilmarnock, has taken up a similar position with Messrs. LAIRD AND SINCLAIR, Dundee and Minifeith. He served his apprenticeship with Messrs. Dickson and Co., Edinburgh, and before going to Kilmarnock he gained a wide experience with several English firms, including Messrs. Paul and Son, Rose-growers.

MARKETS.

COVENT GARDEN, Wednesday, December 28th, 1927.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	10 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–40 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	16 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray 12's, 15's ...	5 0—7 0
Chrysanthemums, 48's per doz.—	
pink... ...	18 0–21 0
—yellow ...	12 0–18 0
—bronze ...	15 0–18 0
—white ...	12 0–18 0
—red	15 0–18 0

	s. d. s. d.
Crotons, doz. ...	30 0–45 0
Cyrtomiums ...	10 0–25 0
Erica gracilis, 48's, per doz.	24 0–30 0
— — 60's, doz.	12 0–15 0
—mixed, 72's, per doz. ...	8 0—9 0
—hyemalis, 48's, per doz. ...	18 0–36 0
—nivalis, 48's, per doz. ...	27 0–30 0
— — 60's, doz.	12 0–15 0
Nephrolepis in variety ...	12 0—8 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	15 0–18 0
—60's, per doz.	8 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	12 0–15 0
—cuneatum, per doz. bun. ...	10 0–12 0
Anemones, St. Brigid, per doz. bun. ...	8 0—9 0
Arums (Richardia), per doz. blooms ...	12 0–15 0
Asparagus plumosus per bun. long trails ...	2 6—3 6
—med. sprays	2 6—3 0
short „ ...	0 9—1 3
—Sprengeri, bun. long sprays	2 0—2 6
med, „ ...	1 0—1 6
short, „ ...	0 6—1 9
Camellias, white, 12's, 18's per box. ...	3 0 3 6
Carnations, per doz. blooms .	6 0—8 0
Chrysanthemums, per doz. blooms—	
—white ...	4 0—8 0
—yellow ...	4 0—6 0
—pink... ...	5 0—8 0
—bronze ...	4 0—8 0
—red	4 0—6 0
—spray, bronze, per doz. bun.	30 0–36 0
—spray, pink, per doz. bun.	30 0–36 0
—spray, yellow, per doz. bun.	30 0–36 0
—spray, white, per doz. bun.	30 0–48 0
Croton leaves, per doz. ...	1 9—2 6
Daffodils, Single, per doz. bun.	36 0–48 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	12 0–15 0
Freesia, white, per doz. bun.	12 0–18 0
French flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Narcissus, Paper White, per doz. bun.	6 0—7 0
—Violets, Parma, large, per bun..	— —
—Ruscus, green, per pad ...	6 0—7 0
—Solanum fruits, per pad ...	8 0–10 0
—Anemones, mixed, doz. bun	12 0–15 0

	s. d. s. d
French flowers—	
—Ranunculus, carmine, per doz. bun.	7 0—9 0
— — Barbaroux, per doz. bun.	7 0—9 0
— — Romano, per doz. bun.	15 0–18 0
—Roses, Saffrano, per pkt. ...	2 3—2 6
—Marguerite, yellow, per doz. bun. ...	2 6—3 0
—Violets, single, per doz. bun.	2 0—3 0
Gardenias, per doz. blooms .	9 0–12 0
Heather, white, per doz. bun.	— 12 0
Hyacinths, Roman, 6's, per doz. bun.	2 0—2 6
—on Bulbs, per doz. bun. ...	5 0—6 0
Lilac, white, per doz. sprays...	6 0—8 0
Lilium speciosum album, per bun.	6 0—7 0
—short, per doz.	5 0—6 0
—rubrum, long, per bun	6 0—7 0
—short, per doz.	— 5 0
—longiflorum, long, per bun.	5 0—6 0
—short, per doz. blooms ...	— 5 0
Lily-of-the-Valley, per doz. bun.	30 0–36 0
Marigolds, per doz. bun. ...	3 0—4 0
Myrtle, green, per doz. bun.	1 6—2 0
Narcissus Soleil d'Or, per doz. bun.	15 0–18 0
—Paper White, per doz. bun.	12 0–15 0
Orchids, per doz.	
—Cattleyas ...	21 0–30 0
—Cypripediums	8 0–10 0
Poinsettias, per doz. blooms...	18 0–30 0
Roses, per doz. blooms—	
—Columbia ...	10 0–15 0
—Richmond ...	12 0–15 0
—Madame Butterfly ...	12 0–15 0
—Madame Abel Chatenay ...	5 0—6 0
Smilax, per doz. trails ...	3 0—4 0
Tulips, scarlet and white, per doz. bun. ...	18 0–24 0
Violets, per doz. bun.... ...	4 0—6 0

REMARKS.—Prices remain very firm throughout this department to-day. More Daffodils and Tulips are offered, but the supply of English Violets has been stopped by the severe weather. No French flowers arrived this morning.

GLASGOW.

Good business was transacted in the cut flower market in Christmas week, when buyers had to concede a material advance in prices. First consignments of Golden Spur Daffodils were disposed of at 3s. per bunch, while Mon Tresor Tulips ranged from 1s. 3d. to 1s. 9d. for 6's, and Le Matelas from 1s. 6d. to 2s. Carnations were worth from 6s. to 12s. per dozen; pink Roses, 10s. to 18s.; and Lilium longiflorum, 7s. to 9s. per bunch. Narcissi varied from 2s. to 3s. per dozen bunches, despite the frosted condition of many blooms. Chrysanthemums were in good demand at about former prices; Phyllis Cooper realised 2s. 6d. to 3s. for 6's; Ada Brooker, Winter Cheer, Red Lincoln and Favourite, 2s. to 2s. 6d.; Mary Morris, 1s. 9d. to 2s. 3d.; W. Duckham, 1s. 9d. to 2s.; Niveus, 1s. to 1s. 6d.; Wilcox, 9d. to 1s. 2d.; and Heston White, 9d. to 1s.

Trade in the fruit market was none too brisk considering the season. The turnover in Apples gave no indication of expansion, but prices kept steady in spite of the plentiful supplies. Canadian Greenings made 34s. to 39s. per barrel; Spies, 40s.; York Imperials, 30s to 32s.; Ben Davis, 20s. to 25s.; Baldwin, 26s. to 30s.; Oregon Pippins, 16s. to 20s. per case; Delicious, 13s. 6d. to 16s.; Winesap, 13s. 6d. to 14s. 6d.; Rome Beauty, 10s. to 11s. 6d. Jonathan, 10s. 6d. to 15s.; Grime's Golden, 12s. to 15s. Jaffa Oranges, 14s. to 16s. 6d.; Valencia, unchanged; Mandarins, dearer, at 1s. 3d. to 2s. per tray; Grape Fruit, 22s.; Californian Winter Nelis Pears, 27s. 6d. per case; half-case, 15s. 6d.; Beurré Bosc, 18s. per box of 50 lbs.; Kippen Grapes, 3s. to 3s. 6d. per lb.; English Colmar, 1s. 6d. to 2s.; Belgian, 1s. 4d.; South African Peaches 12s. 6d. per box; and Apricots, 3s. per tray.

Teneriffe Tomatos improved at 22s. per bundle for best quality, and 14s. for ordinary; Lettuces, dearer at 4s. to 6s. per dozen; Cauliflowers, 4s. to 5s.; Mushrooms, 2s. to 2s. 6d. per lb. The market will be closed on Monday next, which is to be observed as New Year's Day holiday.

NEW HORTICULTURAL INVENTIONS.

THESE particulars of new Patents, of interest to readers, have been selected from the Official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

LATEST PATENT APPLICATIONS.

32,941.—Bridger, H. J.—Water reservoir for flower pots, etc. December 6.

32,732.—Craven, W. J.—Protective bands for fruit, etc., trees. December 5.

32,215 —Miller, G. J.—Seed drills. November 30

32,272.—Richards, T. G.—Method of packing fruit, etc. November 30.

32,031.—Williams, F.—Fruit, etc., grading apparatus. November 28.

SPECIFICATIONS PUBLISHED.

281,373.—Chalmers, T. A.—Machines for pruning plants.

281,380.—Jellicoe, R. V.—Preserving fruit and the like.

267,878.—California Fruit Growers Exchange.—Insecticides and fungicides and method of preparing the same.

280,682.—Bentall, C. E., and Bingham, G. C.—Root cleaner.

280,695.—Green, G. T.—Solution for treating trees, plants, and the like, for destroying fungoid disease, insects, etc.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

THE LATEST TRADE MARKS.

THIS list of Trade Marks, of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

IRIS BRAND.

481,777.—Label device with the words IRIS BRAND and an Iris in a triangle for chemical substances used for agricultural and horticultural purposes and made in France.—Société Anonyme Des Usines Dior, 9, Rue d'Athénes (90), Paris. Dec. 14.

WYKON.

485,441.—All goods in class 12 which includes pruning knives, shears, etc.—Myer Sassieni, trading as M. Sass & Co., Bradford House, 21A, Barbican, London, E.C.1. Dec. 14.

MONSOON.

484,869.—Galvanised Wire-netting.—Planters' Stores and Agency Company, Limited, 17, St. Helens Place, London, E.C.3. November 30.

CREOLAIT.

481,161.—Chemical substances used for agricultural and horticultural purposes. Pease and Partners, Limited, 92, Northgate, Darlington, Durham. November 30.

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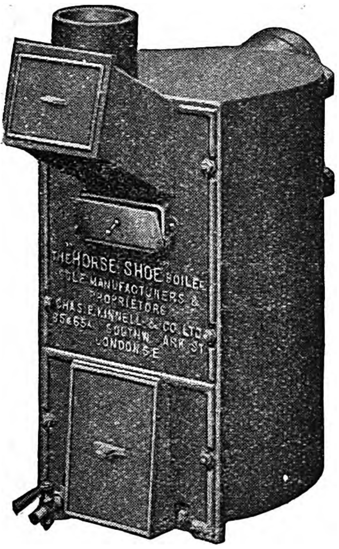

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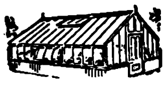

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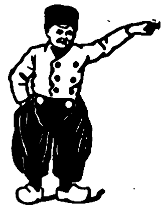

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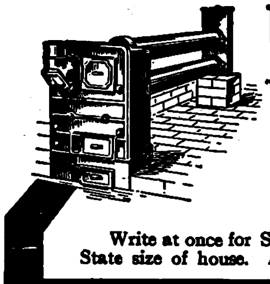

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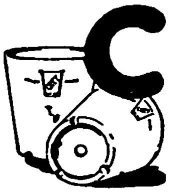

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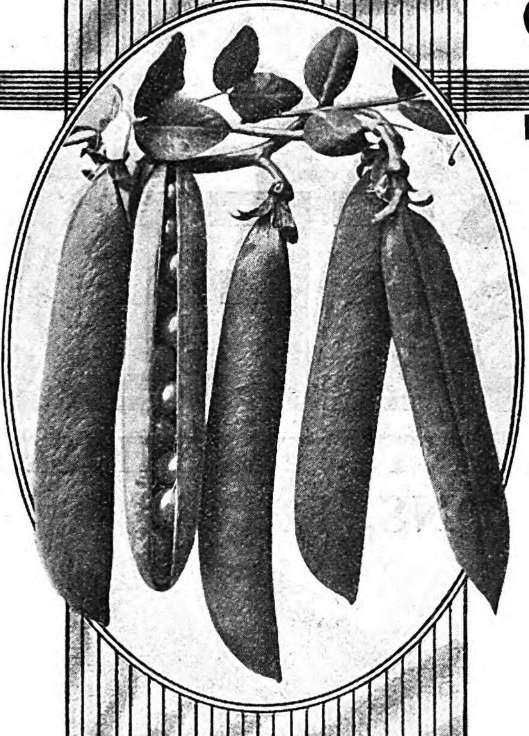

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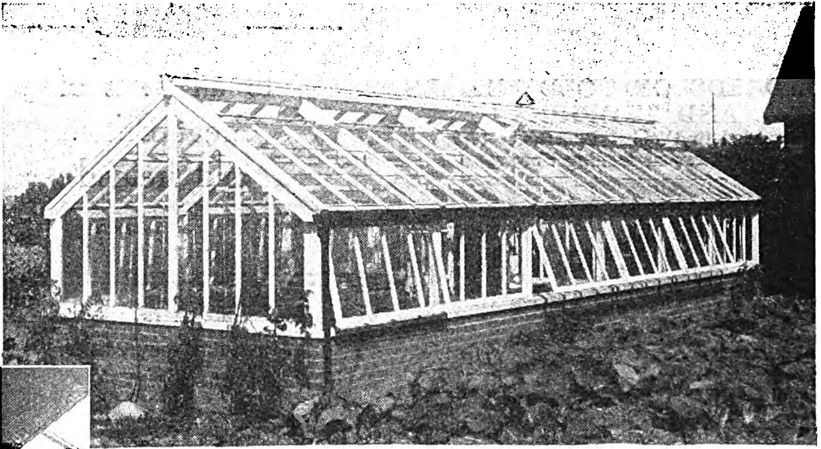

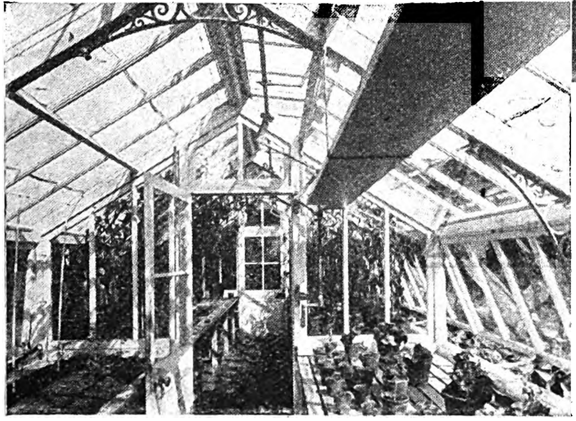

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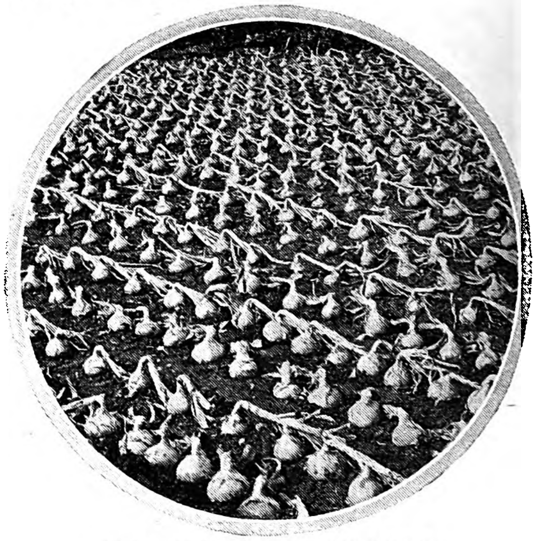

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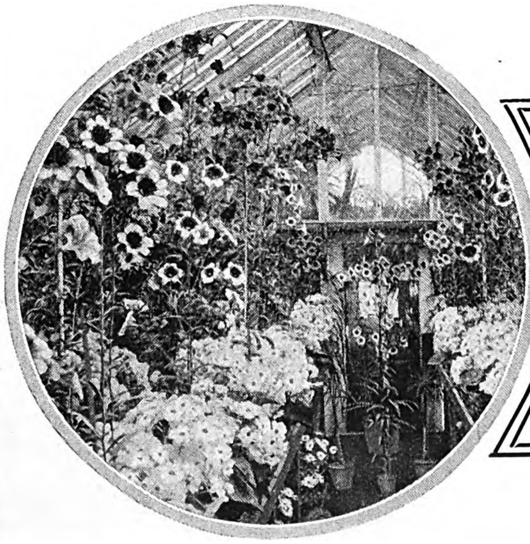

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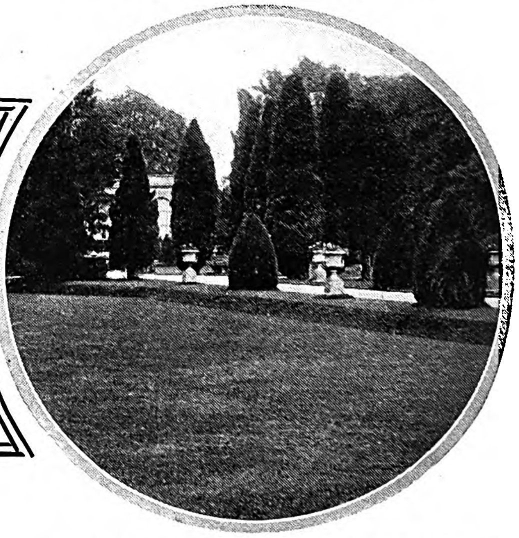

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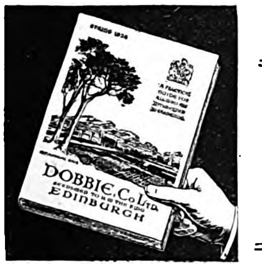

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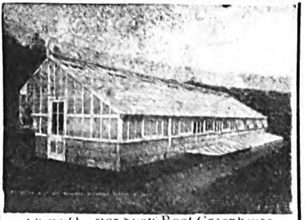

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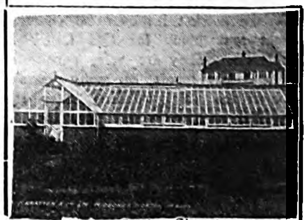

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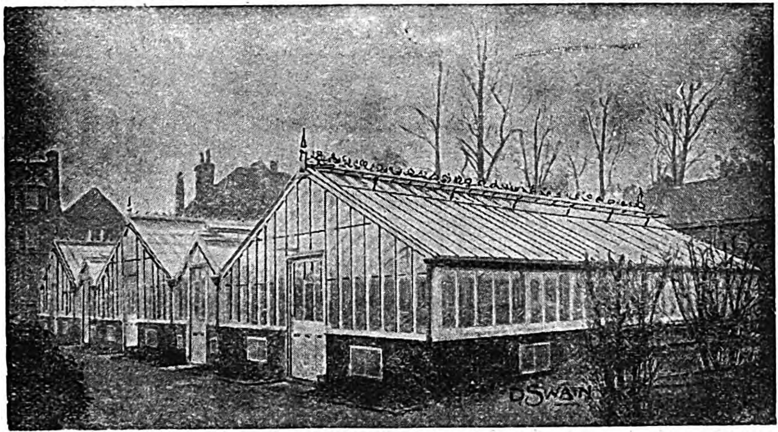

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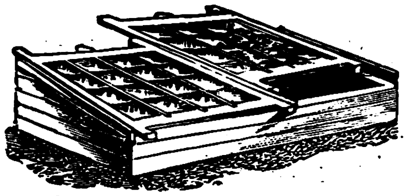
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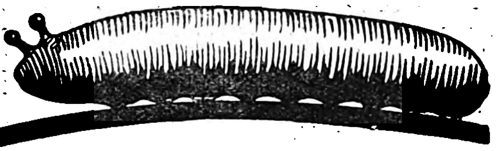

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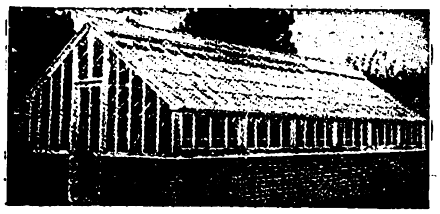

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